THE NEW YORK
JOURNAL OF MEDICINE
FOR MARCH, 1860.

PART FIRST.
ORIGINAL COMMUNICATIONS.

ART. I.—*A Case of Neuroma of the Optic Nerve, together with some general Observations upon Neuroma.* By JOHN A. LIDELL, M.D., late Demonstrator of Anatomy in the College of Physicians and Surgeons, New York City. [Two Lithographic Illustrations.]

Neuroma (from νεῦρον, a nerve) signifies a benign tumor developed in connection with a nerve. This disease is not often met with; and it is only within a very recent period that the general character and relations of these growths have been commonly understood, and that they have been arranged together in a special group or class, denominated neuroma. By the older surgeons, all tumors of nerves were considered to partake of a malignant character, and even Chelius, in his great work on surgery, although he distinctly recognizes the non-malignancy of the nerve-tumors under consideration, still describes them under the head of, and in connection with cancer of the nerves. The excellent monograph of Mr. Robert W. Smith, of Dublin, gives the fullest, most recent, and best account of neuroma which we have seen, and, as Mr. Erichsen well remarks, it contains "the principal part of our knowledge of this subject."

Neuromata are not confined to any one part of the body, to the exclusion of all other parts. They are, however, more frequently met with in the extremities than in the trunk; and, again, found oftener in the lower than in the upper extremity. Their principal seat is the *cerebro-spinal* system of nerves; though Bérard has once met with this morbid growth on a *ganglionic* nerve. The case about to be described is the *only one* I have been able to find where this disease involved the *optic nerve*, and almost the only one involving a nerve of special sense.

These nerve-tumors vary in size, from a pin-head to a melon. In shape, they are regular, and either oval or elongated, their long axis always corresponding with the direction or course of the affected nerve. In structure, they are either cystic, which is the exceptional form, or cystico-solid, or entirely solid (sarcomatous), the latter being the common form. It is believed by some surgeons that, when the solid growth reaches a considerable size, one or more cysts, or cavities, filled with yellowish, brownish, or reddish-brown liquid, are apt to form in the interior, their formation being apparently due to a process of disintegration having commenced therein. Sometimes the tumor appears to be composed of concentric layers. In color, the interior structure varies from white, or grayish white, to a yellowish or reddish-yellow hue. In consistence, they vary from the denseness of fibrous tissue, and the hardness of cartilage, to the soft, fluctuating feel of a sero-cyst. With regard to mobility, *neuromata* are, for the most part, *distinctly movable in the direction of their transverse diameter*, but not in the direction of their long diameter, and this mobility is seldom or never destroyed by contracting adhesions to neighboring parts. Every effort to move these tumors in the course of their long diameter is productive of great pain. The skin investing these morbid growths is never discolored, and the cutaneous veins are never enlarged and tortuous, except the tumors have attained an unusual size; indeed, the integument in general is never affected by this disease in any other way than by mechanical pressure. These nerve-tumors are surrounded or invested with a distinct capsule formed from cellular tissue, condensed by the progressive expansion of the swelling, and it frequently happens that, within this covering, a second can readily be distinguished, formed by the expanded sheath of the parent nerve. *Neuromata never invade the contiguous parts by infiltrating them with their own peculiar substance, and thus imposing on them their own peculiar structure.* They invade the neighboring parts only by mechanically pushing them away as they expand, and by slowly producing absorption of them from long-continued pressure. *Neuroma never infects the lymphatic glands*, neither in its own neighborhood nor in remote parts of the body, *and when properly excised, it never returns.* In all these respects it differs widely from cancer, and is a disease entirely dissimilar thereto in its real character. Neuromatous tumors are commonly found single, though they are occasionally multiple, and in very rare instances, according to the monograph already referred to, as many as several hundred are found in the same subject. The *painful subcutaneous tubercle*, three examples of which are referred to by Chesselden, is one of the most fre-

quent forms of neuroma. Nerve-tumors, though commonly, are not always painful. The simple is much more liable to be painful than the multiple form of the disease. The pain, when present, has a peculiar character; the torture is agonizing, and the pain darts "along the trunk and branches of the nerve, with all the suddenness of an electric shock;" the pain is paroxysmal, and the exacerbations may be produced by pressing upon, handling, or jarring the tumor, by strong mental emotion, by fatigue, and by changes in the hygrometrical condition of the atmosphere, disappearing in dry and clear, and coming on again in damp and cloudy weather. In respect to origin, neuroma is considered to be either spontaneous or traumatic; but whether spontaneous or traumatic, we are no nearer the truth with regard to the special perversion of the nutritive function, upon which the growth of such masses depends. Traumatic neuroma is most frequently seen in the stump of amputated limbs, and its treatment should be conducted on precisely the same principles as that of the spontaneous form of the disease.

Neuromata generally increase in size slowly and steadily. It is said that they never retrocede or disappear spontaneously. Medicines, whether applied locally, or taken internally, do not appear to possess the power to stop, or even to retard their growth materially. Extirpation affords the only certain cure, and extirpation by the knife, or excision, is preferable to that effected by any other method. Excision of a portion of the parent nerve, together with the tumor, has also been recommended, but I can not conceive that this procedure is often necessary. Sometimes, by the exercise of great care and skill, the tumor can be dissected away from the nerve with which it is in contact, without dividing said nerve, a feat which Velpeau accomplished in a case of neuroma sciatica. These tumors should not be excised, unless they are painful, or cause inconvenience to the patient by their size or weight.

The surgeon should, however, bear in mind that not every tumor developed in connection with a nerve is that to which the term neuroma is properly applied. Carcinomatous growths may appear in such situations, and when they do so appear are as distinct from neuroma as cancer of the breast is different from abscess of the same organ. Carcinoma of the nerves presents the same general characteristics as carcinoma in the other soft tissues.

Neuroma is distinguished from carcinoma by the following facts: 1. It never affects the surrounding parts otherwise than by pressure, whereas carcinoma involves the neighboring tissues by infiltrating them, and imposing on them its peculiar struc-

ture. 2. It never contaminates the neighboring lymphatic ganglia; carcinoma does. 3. While it impairs the patient's general health by pain and distress, causing pallor, emaciation and debility, it never produces the true cancerous cachexy by specific infection of the system; carcinoma does produce such a result. 4. It does not return after excision; carcinoma does. 5. The pain of neuroma is neuralgic (electrical and paroxysmal) in character; the pain of carcinoma is not.*

The comparative rarity of the neuromatous disease, its entire benignity, the liability to mistake a bad case of it in an advanced stage for malignant disease, the fact that it is not amenable to *medical* treatment, that it can not be cured short of extirpation, and that it is cured by operation with great certainty, according to the testimony of all observers, and, finally, the fact that I have not been able to find the history or the description of any other case of neuroma, involving the optic nerve, have induced me to place the following case on record, as a contribution to the current surgical literature of the day. It is barely possible that individual cases of neuroma of the optic nerve have passed hitherto for cancer of the eye, or orbit, or both, to which, indeed, in an advanced stage, it bears some resemblance, and thus have either not been extirpated, or, if extirpation has been practiced, the disease has borne another name.

Case.—In the latter part of July, 1858, a pale and rather spare young woman, of twenty years, named J. L., applied to me for advice concerning a large, red, fleshy-looking, elongated, and rounded mass, which filled the left orbit, and protruded therefrom, so as to hang over the cheek almost as far as the level of the nostril [vide, plate I.].

She and her mother together gave the following history: Her health had been good till the spring of 1850, when she was twelve years old. Previously, she had had measles, scarlet fever, and hooping-cough, but had them so light, as not to produce any difficulty worth mentioning. In the spring of 1850, she, along with other children, took the mumps (parotitis), which involved the gland on both sides of the neck. The difficulty in the right gland followed the usual course, which was not the case, however, with the one on the left side. The swelling in this gland did not readily subside, but it remained enlarged and troublesome for nearly a year. In the latter part of the same summer (1850) the left eyelids became swelled. At the same time the right eyelids were natural. This palpebral tumefaction lasted two or three months, or till

* Vide Smith's monograph.

the last of autumn. At first her mother supposed it was produced by poisoning with ivy (*rhus radicans*—they lived in the country), but this conjecture was negatived by the fact that the swelling was confined to the left eyelids, and lasted for so long a time. Four or five months after the palpebral swelling had disappeared, that is, in the spring of 1851, she found the sight of the left eye was becoming dim. Objects, when seen through this eye alone, appeared to be in a mist, or haze. She could, however, distinguish the scholars, as they sat in their places in school, so as to recognize them. At the same time the sight in the right eye was unimpaired. The left parotid gland still continued to be enlarged. Through the remainder of spring, and the following summer, the dimness of sight (amblyopia) increased so rapidly that in the fall (1858) she could only distinguish light from darkness. During all this time she did not suffer any pain, nor muscæ volitantes, nor colored spots, nor flashes of light in the affected eye, so far as she remembers. About this period, i. e., some time in the fall of 1851, she noticed that this same left eye began to protrude (exophthalmos). After this, the perception of light rapidly became fainter, and soon disappeared ; the eye gradually protruded more, until, twenty months afterward (June, 1853), the eye protruded so much that the lid could not be closed over it. Her mother says that, at this time, the eyeball itself did not seem to be much enlarged ; also, that the pupil was widely dilated, and that every thing behind the pupil appeared to be dark-colored. She was positive she never saw any yellowish or shining metallic appearance behind the pupil. The patient says that at this time the eye was distinctly movable in front of and upon the substance, whatever its nature might be, which caused the protrusion, and had been thus movable for some time previously. In this statement she was very positive. Up to this time she had not suffered any pain, except about a year before, when a compress was applied by the late Dr. White, of Cherry Valley. Having tried various remedies without benefit, he resorted to compression, for the purpose of arresting the protrusion, but, after continuing it about two weeks, was forced to abandon it, on account of the severe pain it occasioned. After the compress was removed, the pain ceased. Up to this time her general health had not suffered.

In the latter part of June, 1853, her symptoms underwent a material change. On the day subsequent to a long walk (five miles) under a hot and bright sun, she had a good deal of pain in the affected eye, which became red, and speedily swelled to a great size (conjunctivitis). The eyelids also were much swelled, and purplish in color. During the following fortnight

she suffered very much from the severity of the inflammation; at the end of this period the eye broke, discharging water (aqueous humor) and matter. After this the pain abated, and the inflammation gradually subsided, till it entirely disappeared by the following October. In the mean time, the patient's sufferings had been so severe as to wear her down very much, affecting her general health, and making her thin, and pale, and weak. Much of the ophthalmic enlargement became permanent; that is, the original swelling increased very rapidly during the late period of activity. During the following winter she got on tolerably well; her general health improved, but she was occasionally troubled with paroxysms of pain, neuralgic in character, in the left eyebrow, left half of forehead, and the left cheek. The morbid growth had probably attained such a size as to press considerably on the supra and infra-orbital nerves. In the winter of 1856 and '57, she had fever which lasted six weeks, and left her very weak for a long time. This did not seem to affect the local disease one way or the other. The ophthalmic swelling slowly increased in size, and the neuralgic pains in the left eyebrow, forehead, and cheek, gradually increased in severity until I first saw her (July, 1858). For some time before this, she says she had suffered great distress, the paroxysms of pain being frequent and severe. She also says that any considerable amount of pressure upon the protruding mass, or the handling incident to a physical examination of it, produces, besides the supra and infra-orbital neuralgia (by which I mean pains intermittent, and like electrical shocks), an aching pain in the mass itself, so severe as to deprive her of sleep for the following thirty-six or forty-eight hours. A misstep in walking, whereby the diseased parts are jarred, produces a similar distress, varying only in intensity. She is not subject to any other pains in the head than those mentioned; except, perhaps, more or less of a sense of distention in the orbit. She has partial deafness in the left ear, but was not aware of it till I ascertained it during the examination. She menstruated at 14, and has always been regular. There is no hereditary disease in the family.

Objective Symptoms.—The patient is pale, and rather thin; the features are sharpened, and the habitual expression of countenance is that of much distress; the eye (sound one) is grayish-blue in color, and the hair brown. The patient sits with her head dropping partially forward, apparently from the weight of the tumor.

On close inspection, the protruding mass is seen to be regular in shape, rounded, elongated, and somewhat conoidic at the end, and to hang down almost to the level of the nostril; the

upper eyelid is thrust forward and stretched down over it to the breadth of two inches; the tarsus and ciliæ are sound; the skin is natural in color; and the eyelid, notwithstanding it is stretched so much, is every where movable, in some degree, over the morbid growth; and near the tarsal border is a vein enlarged, blue, and tortuous. At the opposite, or conoidic end of the tumor is a pearl-colored, nearly circular spot, three fourths to seven eighths of an inch in diameter, evidently the opaque remains of the cornea, which had been destroyed in 1853. Between this pearl-colored, opaque spot, and the tarsal border of the lid, the tumor is dark red in color, and is covered with a granular membrane, which secretes a muco-purulent fluid; this is evidently the ocular and palpebral mucous membrane, pushed down from its natural situation, and stretched over the morbid mass; this dark-red, granular, and thickened conjunctiva is not reflected beneath the eyelid, but terminates abruptly at the tarsal border thereof; no ulcerations are present, and this mucous membrane is, in some degree, movable (non-adherent) throughout its whole extent. Beneath the middle of the upper eyelid, there is a semi-fluctuating sensation imparted to the touch (deep-seated fluctuation). In every other part the tumor has a tense, fleshy, and elastic feel. The orbit is completely filled by it; the orbitary margin is well defined, but the size of the orbit itself is considerably increased in the direction of both its perpendicular and horizontal diameters; indeed, the orbit is so much enlarged, that the portions of the malar and temporal bones, which form the external boundary of the orbit, bulge out so much as to produce quite an angular appearance of that side of the head and face. The tumor also seems to be slightly movable in the orbit, but of this I am not entirely sure. I can not discover any disease in the walls of the orbit besides the enlargement above mentioned, which has apparently been produced by the long-continued pressure of the morbid growth.

Diagnosis.—The object of diagnosis is the discrimination of diseases. "The science of diagnosis," says Louis, "is the most important, most useful, and most difficult of all the divisions of medical science. The discrimination of the peculiar nature of each kind of disease, and of its different species, is the source of curative indications. Without an accurate and precise diagnosis, theory is ever at fault and practice often unfaithful."*

The object of diagnosis as applied to the case in hand, is to determine whether the morbid growth we have been describing

* Vide Chomel's Pathology, p. 273.

is cancerous or benign in character; whether it is developed from the eye itself, destroying that organ by its progressive enlargement, or from the soft parts behind the eye, occasioning ophthalmic protrusion (exophthalmos) and subsequent destruction of the organ, by mechanical pressure: or, again, whether it is developed from the osseous wall of the orbit, or from parts still deeper seated, e. g., the brain; in fine, whether excision of the tumor be possible, and, if possible, whether such excision would be beneficial to the patient. If the disease is benign, then its extirpation can be attempted with a reasonable expectation of curing the patient: if, on the other hand, it is carcinomatous, no such encouragement should be offered.

The disease resembles carcinoma in several respects. The patient's general health is impaired, and she is thin, and pale, and weak. The swelling also is painful, and located in a situation where most swellings of large size are at once strongly suspected to be cancerous; indeed, the disease had already been diagnosticated as carcinoma by more than one respectable medical man, and the case pronounced to be utterly hopeless. But the case presented other symptoms, which do not belong to carcinoma, and it was my appreciation of them which led me to a conclusion different from that arrived at by others who had seen the patient. It seemed to me that even the pallor and emaciation might be ascribed to the constant muco-purulent discharge from the conjunctiva, and to the severe neuralgic pain already mentioned, with fully as much propriety as to the constitutional infection of carcinoma; indeed, the patient's countenance, though pale, did not, as it appeared to me, present that peculiar hue and peculiar expression which are characteristic of the cancerous cachexy. Again: there was nothing about the pain characteristic of malignancy. No pain was occasioned by the tumor, until it became so large as to press upon the ophthalmic branches of the fifth pair that run along the walls of the orbit, and the larger the tumor became, and the greater its pressure upon these nerves, the severer became the pain. The pain did not seem to be in the tumor itself, so much as in the neighboring parts, which were invaded mechanically by the morbid growth. Again: this tumor did not appear to affect the surrounding tissues, otherwise than by pressure. One of the most important characteristics of malignant disease is, as already stated, that it is prone to invade the surrounding tissues by infiltrating them with its own peculiar substance, and imposing upon them its own peculiar structure, thus contracting adhesions to surrounding parts, and, as it were, fusing them all together. The tumor under consideration has done nothing of the kind; for, notwithstanding its great size, even the skin

covering it is healthy and non-adherent to it. Again: malignant disease about the eye, of long standing, is almost certain to infect the neighboring lymphatic ganglia. In this case, these glands are not involved in any way whatever. And, finally, I believed the tumor to be non-malignant, from the length of time through which its development extended, and the slowness of its growth—from 1851 to 1858, more than 7 years. Objective symptoms showed that, if the disease were malignant, it must be that form known as encephaloid (it was too soft in feel for scirrhus), and encephaloid requiring more than seven years to run its course would be a wonder among surgeons. The statement made by the patient's mother, that no shining, metallic, or yellowish appearance was ever visible behind the pupil, is also of some value in negativing the supposition of ocular cancer.

The tumor was not developed from the eye itself, because that organ lay in front of, and was distinctly movable upon the tumor for a considerable space of time anterior to the attack of conjunctivitis in June, 1853. On this point, both the patient and her mother are positive. The tumor was not developed from the osseous wall of the orbit, because if such had been the case it would have protruded first on the side of the orbit to which it was attached, and it would also have pushed the eye partly in the direction of the opposite side of the orbit; whereas, the tumor actually protruded centrally, and pushed the eye directly before it. The tumor did not involve the brain, because there was no symptom present denoting an organic lesion of that organ. The only cerebral symptom was partial deafness in the left ear, and that entirely lacked proportion to the extent and duration of the disease.

The conclusion appeared to me irresistible, that the protruding mass consisted of a *benign tumor*, which had pushed the eye before it; that said tumor was developed from some of the soft parts behind the eye, and was probably inclosed by the ocular fascia, and mature reflection made these conclusions settled convictions. I did not diagnosticate the tumor as neuroma of the optic nerve, before excising it; for I did not at that time know that neuroma ever attacked the optic nerve, or indeed any other nerve of special sense.

Early in August I expressed to my patient the belief that the disease was not a cancer, but a benign tumor, developed from the soft tissues behind the eye, and circumscribed by the ocular fascia, and that the extirpation of it, though a severe operation and attended with great danger, afforded a reasonable prospect of ultimate recovery. The patient readily assented to my proposal to extirpate it; but as the weather was then hot, and malarious diseases (remittent and bilious-remittent fevers)

were prevalent in her locality (Schuyler's Lake), I advised a postponement of the operation till the weather had become cooler, and the malaria had disappeared.

During the next two and a half months her sufferings increased; there was more of the feeling of distention in the orbit; the pain in her left cheek and left forehead came on oftener, was intenser, and lasted longer, producing great distress, and her general health failed considerably.

Operation.—On the 30th day of October, 1858, I proceeded to operate, assisted by Drs. Ollendorf, Patrick, Leaning, and Gleason. The patient was placed in the recumbent posture on a couch, the head being raised by means of pillows nearly to the height of an ordinary table. She was then brought fully under the influence of sulphuric ether, and complete anæsthesia was maintained throughout the operation. An incision was made through the skin and orbicularis muscle, from the external canthus, backward and a little upward, to the margin of the orbit. Another incision was made through the thickened mucous membrane, along the tarsal border of the upper eyelid, and close to it across the upper and anterior part of the tumor, from the inner to the outer canthus. The upper eyelid was next dissected off from the tumor, as far as the rim of the orbit, exposing here and there fibres of the orbicularis muscle, and then intrusted to an assistant, to be held out of the way during the subsequent steps of the operation. At the rim of the orbit, the real difficulties of the operation commenced. The cavity of the orbit was so completely filled by the tumor, which, on account of its peculiar attachment, could not be drawn forward, that space could not at first be obtained wherein to detach the tumor in a proper manner. In doing this part of the operation I was desirous of using as little force as possible, for I did not know how much the orbital plate of the frontal bone might have been thinned and weakened, by the long-continued pressure to which it had been subjected, and I was also anxious to do as little injury as possible to the supra and infra-orbital nerves. Indeed, it was not till two cysts of considerable size, containing reddish-brown serum, had been evacuated that the requisite space was attained. (These cysts had occasioned the semi-fluctuation through the upper eyelid heretofore mentioned.) The tumor was then carefully detached from the roof or superior part of the orbit mainly with the handle of the scalpel, dividing here and there a fibrous band with the cutting edge. Then the tumor was drawn upward as far as possible; the thickened mucous membrane was divided along the tarsal border of the lower lid; that lid was dissected away, and the tumor was detached from the lower part of the orbit in the

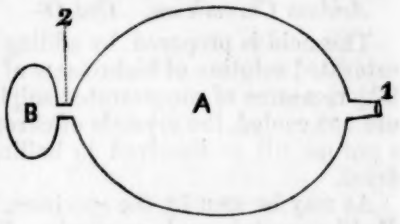
same manner as from the upper part thereof. Its remaining lateral attachments were also cleared. The tumor hanging now only by what seemed to be its root, was drawn forcibly downward and forward, a curved scissors was carried behind it, the root was divided as far back as possible, and then the morbid mass came readily away. A sudden and copious gush of blood from the enlarged ophthalmic artery and vein immediately followed. The hemorrhage was partially checked by the application of cold water, and pressure steadily continued for a few minutes. It was now seen that we had made a clean dissection of the orbit, leaving its cavity, apparently, covered only with periosteum, along which ran certain of the branches of the ophthalmic branch of the fifth pair of nerves, plainly in sight. The lachrymal gland was removed along with the morbid mass above mentioned. The stump formed by the divided ocular muscles being apparently too long, and fearing lest it might afford a nidus for the return of the disease, the curved scissors were again introduced, and it was divided still further back. Then followed a still more copious gush of blood ; so great, indeed, as to threaten seriously the patient's life, she having already suffered much from the shock of the operation, together with the previous loss of blood, which had been considerable. Cold, and pressure made with the fingers, appearing to fail in stanching the hemorrhage, the whole orbit was at once carefully filled with compressed sponge, a compress was placed on the outside of it, and a few turns of a roller were wound round the head to secure the whole against displacement. By this means the bleeding was immediately stopped. The patient was readily roused from the anæsthetic sleep by sprinkling her face with cold water.

She rallied slowly from the operation, and complete reaction was not established till late in the following night. But after this no dangerous symptoms supervened. From the risk of inflammation of the brain or its membranes, in addition to the hazards ordinarily attending capital operations, the anti-phlogistic regimen was strictly enforced, and the most absolute quiet was enjoined on the patient. Suppuration was fully established on the fourth day. As no irritation or other difficulty was produced by the sponges, most of them remained in the wound till the sixth day ; and the last piece, that is, the one in apposition with the ophthalmic artery and vein, was not removed till the end of two weeks. I hoped by this delay to lesson the risk of secondary hemorrhage. To destroy the fetor occasioned by the sponge remaining in a suppurating wound, a weak solution of liqueur de Labarraque was frequently applied by injection and otherwise. After suppuration was fully estab-

lished, the patient was supported by tonics, of which the most useful was sulphate of quinine and sulphate of iron, and a diet nutritious and easy of digestion. She steadily improved, and in three weeks began to leave her room, and in six weeks to ride. The only difficulty in the after-treatment was occasioned by the sponges, small pieces of which adhered to the deeper parts of the wound, and subsequently, by their presence, produced irritation, exuberant granulations, and retarded the process of cicatrization. As often as these fungus granulations were observed, they were cut down with caustic, and the bit of sponge removed which had occasioned them. These troublesome pieces of sponge were several in number, and varied in size from a pin-head to a pea; and, what seemed to me very strange, the parts to which they adhered did not seem to possess the power to cast them off by the process of suppuration or ulceration. Sensation was impaired and even destroyed in a part of the left forehead, from unavoidable injury to some filaments of the supra-orbital nerve, but it was gradually restored again as the cure progressed. After a time the partial deafness in the left ear, already mentioned, also entirely disappeard. The bulging of the cheek occasioned by the enlargement of the orbit likewise slowly diminished. Plate II. represents the patient as she appeared thirteen months after the operation. At the time of this writing, fourteen months and a half after the operation, she is in good health, the wound is entirely well, and there is no indication whatever of a return of the disease. The operation may be claimed as entirely successful, inasmuch as it has stood the test of time.

The *extirpated tumor-mass*, on a closer examination, is found to be covered externally by a smooth and shining capsule, formed from a condensed cellular tissue, through which certain of the ocular muscles and certain branches of the third pair of nerves are plainly seen. The ocular muscles themselves are elongated, thinned, and flattened, but not otherwise diseased. Within the ocular muscles, and embraced by them on every side, the true capsule of the tumor is found. It is formed by the expanded and thickened sheath of the optic nerve. That nerve enters the posterior end of the tumor near its centre, and, indeed, it seems to form the tumor by expanding suddenly, abruptly, and about equally in every direction. The neuroma itself, apart from all extraneous matter, is as large or larger than a goose-egg. On section it appears to consist of a laminate tissue (fibrous), whose color is a reddish lemon-yellow. The ruptured cysts, heretofore mentioned, are lined by a smooth membrane. In shape, the neuroma is oval, and somewhat elongated. From its distal end, the optic nerve springs out as

abruptly as the stem from a water-melon. It then continues of uniform and normal size about one fourth of an inch to the eye, where it terminates. That organ is flaccid ; the lens is absent (it had probably escaped when the cornea burst, and the humors were discharged in June, 1853), but its coats do not exhibit any evidences of disease other than the results of the inflammation which occurred at that time. The following illustration exhibits at a glance the relation existing between the eye, the neuroma, and the optic nerve on entering and departing from it, the parts being freed from all extraneous matter.



The optic nerve, at the point where it was divided behind the neuroma, is somewhat enlarged, and its tissue is tinged with a reddish and a yellowish hue ; not to the same extent, however, as the neuroma. I regret exceedingly, that circumstances prevented a microscopical examination of the tumor.

ART. II.—*Transactions of the Kings County Medical Society.* Prepared by a Committee of Publication.

*Notes upon New Remedies.** BY EDWARD R. SQUIBB, M.D.—Since the last decennial revision of the National Pharmacopœia an unusual number of new remedies have been proposed, and brought into use in various sections of the profession. Among these many have never, from various reasons, reached the general profession further than by a first cursory indefinite notice. Others, more frequently noticed, and urged with more pretension have attracted more attention and publicity ; and upon hypothetical grounds, supported more by science and logic than by practical utility, and more by quackish puffing and advertising than by any thing beside, have become so widely and generally known as to require no notice here. To this class belong the hypophosphites, the so-called "chemical food" and other popular salts and sirups of phosphates.

To neither of these classes does the writer propose to ask the attention of the Society ; but rather to a far less numerous class wherein better chemistry, supported by better logic and confirmed in some degree by practical application, gives promise of somewhat more definite and permanent results in general practice.

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* Read before the Society, August, 1859.

The notices of these preparations do not pretend to great detail, accuracy, or research, and the character of the investigation prevents their being a definite statement of established facts, so that the writer is forced to rest satisfied with the endeavor simply to bring the articles together again into notice, in conjunction with the prominent points of interest and practice which the short career of each may have gathered around it, within the limits of his reading and professional intercourse.

In adopting an alphabetical order the first article is Chromic Acid.

Acidum Chromicum. Crd O^3.

This acid is prepared by adding one hundred measures of a saturated solution of bichromate of potassa to one hundred and fifty measures of concentrated sulphuric acid. When the mixture has cooled, the crystals of chromic acid are separated upon a porous till re-dissolved in boiling water, recrystallized, and dried.

As may be seen by the specimen, it is in the form of red needle-like crystals, and commonly a little moist from its very deliquescent character. It is soluble in water in all proportions, and when in solution, or when moist, it is rapidly decomposed by all organic matter, decomposing the organic matter by oxydizing it, at the same time. Upon this property of rapidly oxydizing organic matters depends its action as an escharotic, and whatever peculiar advantage it may have over potassa, chlorid of zinc, etc., depends upon the rapidity and completeness of its action and upon the circumstance that it is self-limiting in its effects, since it is itself decomposed into inactive sesquioxyd of chromidum in direct ratio with its activity. It is applied in a pasty condition or in solution, and another advantage claimed for it is that the rapidity of its action may be controlled by the strength of the solution used, and that the action may be stopped at any moment by copious ablution. A strength of one hundred grains of the acid to one fluid ounce of distilled water is that recommended for destroying venereal warts and similar morbid growths, applied by means of a glass rod.

It was first used as a caustic by Prof. Sigmund of Vienna, by recommendation of Dr. Heller, and the accounts of its uses and some experiments with it were translated into the *Dublin Quarterly Journal*, No. XIII., p. 250. It was used with success in the venereal wards of the University College Hospital of London, by Mr. Marshall, and an abstract from these notices of its use may be found in *Ranking's Abstract*, No. XXV., p. 149, and in the *U. S. Dispensatory*, 11th ed., p. 1392. In the *New Orleans Medical News* of Nov., 1857, Dr. I. L. Crawcour publishes two cases in which he used it to remove morbid growths

from the scalp with the alleged advantages that it caused little pain, left but little scar, and did not destroy the hair-bulbs. In view of its chemical character the latter statement is a little surprising.

Acidum Sulphurosum. Sd O^2.

A solution of sulphurous acid gas in water for medicinal purposes is best prepared according to Prof. Procter, see *Amer. Jour. Pharm.*, vol. XXIX., p. 110, by passing the gas from four ounces of copper turnings, and eight fluid ounces of sulphuric acid into four pints of water, and preserving the solution in small bottles well filled and well corked.

This is a colorless solution, with a strong acid taste and reaction, and the well-known odor of burning sulphur. When fit for medical use it should give no precipitate with solution of chlorid of barium, nor with lime-water, so long as the sulphurous acid is in excess.

The acid prepared as above is diluted with twice its volume of water for use, and is applied by means of cloth soaked in it, covered with oiled silk. Its peculiar action as a remedy is supposed to depend upon its chemical property as a deoxydizing agent, and it is therefore in effect, as in chemical character, exactly opposite to chromic acid. In its application to diseases which depend upon the growth of parasitic plants and animalculæ, it probably kills them by asphyxia or suffocation, by depriving them of oxygen.

Dr. Wm. Jenner, of University College Hospital, London, was the first to use this remedy as a prompt and active "parasiticide" as he calls it. In a paper by him, published in the *London Med. Times and Gazette* of Dec., 1857, p. 649, he highly extols its use in tinea favosa and kindred diseases. See also *Braithwaite*, XXXVII., p. 180.

Dr. Bennett, of Edinburgh, also used it successfully in inveterate cases of similar character.

The alleged advantages are that it is prompt and efficient, and successful where other means fail, while it is far more cleanly and manageable than many other of the commonly applied topical applications. See *U. S. Dispensatory*, 11th ed., p. 1492. The writer has heard of its having been used with success, chiefly in Philadelphia, but nothing definite of cases or results has been published that he is aware of.

Argenti Nitras Fusus containing chlorid of silver.

This new form of lunar caustic is prepared by adding a definite proportion of hydrochloric acid to the crystals of nitrate of silver at the time of fusing, and pouring the fused mixture into moulds in the usual way. The proportion of the officinal

acid which gives five per cent. of chlorid in the fused nitrate, is forty grains to two ounces of the crystals.

The sticks of lunar caustic thus made are of a darker color than usual, in consequence of the more rapid effect of light upon the chlorid. They are harder, much less soluble, and of about double the strength or toughness of the pure nitrate. When fused nitrate of silver is perfectly pure, the sticks are grayish white, translucent, of a crystalline structure, and are very brittle—almost friable, and so soluble, that, in application to moist surfaces, more of the salt is left upon the tissue than is desirable.

The increased strength of the sticks in this new form, and the diminished solubility must therefore prove to be very valuable qualities in a large proportion of cases where the nitrate is used. While as yet there are no known disadvantages from the admixture.

This improvement in lunar caustic is due to Prof. J. Lawrence Smith, of the Medical Department of the University of Louisville, Ky., and an account of it was published in the "*Semi-Monthly Medical News*," of Louisville, for Feb., 1859, p. 65.

It is known in the commerce of lunar caustic, but not so well known in the medical profession, where this important article is used, that the manufacturers without any known exception sell two kinds, which are of different degrees of purity, and which are often designated on prices current as "No. 1" and "No. 2," or as "Pure" in the one case, and "No. 2" in the other. The "No. 1," or so-called "pure" nitrate, commonly contains from 1 to 12 per cent. of nitrate of potassa, or other cheap salt, added, as is alleged, for the purpose of toughening the sticks, and to make it run well in the moulds. The "No. 2" commonly contains from 25 to 33 per cent. of the cheaper adulterating salt. In "the trade" these two varieties are known and distinguished by the sticks being rolled in one case in white paper, and in the other in white paper of a blue tint—or, when both are rolled in paper of the same color, by the ends being sealed by wax of different colors. And when in half pound or pound bottles the figure "2," often in lead pencil, may be found in one corner of the label. These delicate distinctions do not, however, often accompany the article into the hands of medical men, and the effect is so unmistakably bad that the writer, some time since, devoted much attention to the discovery of some simple easy test whereby the fraud might be detected. In this he was fortunately successful, and the test as now exhibited to the Society will easily and effectually discriminate between a good and bad article, and, if relied upon, will probably cause four fifths of the lunar caustic in the hands

of medical men to be rejected, taking the profession at large. A small fragment of nitrate of silver—say four times the size of a pin's head—crushed to powder with a knife-blade upon a piece of paper, the powder spread out over the paper, and the paper and powder then rolled up into a small match-like roll, set on fire, and burned, leaves a tasteless residue of pure silver. But if the nitrate contains even 1 per cent. of any saline impurity the residue, instead of being tasteless, will have the sharp alkaline taste of the base of the adulterating salt. The little match burns rapidly with deflagration, and provided the quantity of the nitrate taken be not too great for the size of the paper, and provided the powder be well distributed through the paper, the carbon of the paper will in burning reduce perfectly all the silver, and in great measure the base of the adulterating salt also.

With this simple test no one need be deceived in the character of the lunar caustic he uses, until some new and more fixed adulterating substances are found. The chlorid of silver in the new form does not interfere at all with the application of this test, since in that case also the residue is tasteless.

Bismuthi Subcarbonas. Bit. C. O^2 + H. O.

Subcarbonate of bismuth is prepared by adding a solution of the ternitrate of bismuth slowly and with constant agitation to an excess of solution of carbonate of soda. The subcarbonate which separates as a white powder is well washed and dried with a gentle heat. The points of most importance in this process are first to have the metallic bismuth from which the nitrate is made free from arsenic; and, secondly, to have the alkaline carbonate in great excess. In an experience of more than six years, the writer has only once obtained the metal quite free from arsenic, although he has three times paid nearly double price for it in consideration of statements made by the seller, which proved to be false in regard to its purity. Some recent investigations by Prof. Rogers, of Philadelphia, seem to show that subnitrate of bismuth is very commonly contaminated with arsenic, and occasionally to a very mischievous extent. This is an evil of the greater magnitude since the testing for arsenic in this particular case is more than usually difficult. In view of the results obtained by various authorities, it appears rather probable that some of the unpleasant effects hitherto attributed to the subnitrate were due to this impurity.

As seen by the specimen presented, the subcarbonate is in the form of a white, or yellowish-white (from a tinge of iron) powder—tasteless and odorless, and free from roughness. It is specifically lighter than the subnitrate, and dissolves freely with effervescence in dilute acids. It is given in substance, before

meals, in water or sirup, in quantities of ten to thirty grains, three times a day in adult cases.

The only preparation of bismuth hitherto much used is the subnitrate. This, by varying and often unskillful manufacture is far from being uniform in its composition. When washed till the washings cease to have an acid taste, as is frequently done, it is reduced nearly to the condition of an oxyd, when from greatly diminished solubility much larger doses are required and imperfect results obtained. At best, however, this preparation is liable to produce mechanical irritation and oppression of the stomach, constipation, and when long continued, a train of symptoms approaching those of scurvy. The subcarbonate is said to produce no such ill effects. It is soluble in the gastric juice, with the additional valuable property of being antacid. It excites no repugnance by roughness or tenacity upon the palate, and its action is prompt and efficacious. During the first few days it is sedative, and subsequently tonic. It is regarded as being peculiarly adapted to secondary atonic gastralgias; to laborious digestion, particularly when accompanied by acid or putrescent eructations with tendency to vomiting or diarrhœa—to the vomiting of children, whether caused by dentition or indigestion; and to the diarrhœas of feeble children. Under its use the digestion improves rapidly, the tongue assumes its natural form and color, the appetite improves, and the skin loses its shriveled appearance and sallow color. In short, judging from its chemical character and uniformity, as well as from the statements made respecting its therapeutic effects, it appears well adapted to replace the subnitrate altogether.

It was first used and brought to the notice of the profession by Prof. Hannon, of the University of Brussels, in 1857, and his paper on the subject may be found in the "*Bulletin de Thérapeutics*" for February, 1857. In the *British and Foreign Medico-chirurgical Review* for July, 1857, p. 229, or *Braithwaite's Retrospect*, part XXXVI., p. 285, and in the *U. S. Dispensatory*, 11th Edit., p. 1489, may be found the greater part of what has yet been published concerning this preparation. It has been used here by at least two members of this Society with satisfactory results.

Ferri et Ammoniæ Sulphas. $Fe^2 O^3, 3 SO^3, + NH^4, O, SO^3, +2^4, HO$.

Ammonio-ferric alum is prepared by adding together, in definite proportions, solutions of tersulphate of sesquioxyd of iron and sulphate of ammonia, and setting aside till the double salt crystallizes out. The crystals are redissolved, and recrystallized from a slightly acid solution, washed with

very dilute sulphuric acid, and dried as speedily as possible at ordinary temperatures. It should then be kept in well-stopped bottles and secluded from light, since a very little exposure, particularly in sunshine, causes the crystals to become brown or rusty from decomposition of a portion of the salt.

This alum, like all others of the class, occurs in regular octahedral crystals, is of a violet or amethyst tint, the crystals being often a little moist, and sometimes very slightly rusty or dingy, without their value being materially impaired. It is odorless but has an acid, astringent, ferruginous taste; is very soluble in water, forming a dark-colored solution in consequence of a partial decomposition, and the formation of a basic iron salt. It is commonly used in solution, whether for internal or external application. The dose is from three to six grains, three times a day, and is commonly given by Dr. W. T. Smith, in infusion of calumba.

Mr. Lindsey Blyth, of St. Mary's Hospital, London, in December, 1853, brought to the notice of the profession, through the *London Pharm. Journal*, two iron alums—the potassio-ferric, and ammonio-ferric—both of which had been used with success in that hospital. Dr. Wm. Tyler Smith, of London, in his work upon the Pathology and Treatment of Leucorrhœa, states that he commenced the use of them as early as 1852, and from prolonged experience knows no internal remedy that equals them in the treatment of leucorrhœa. Further experience among other observers, both in England and in this country, seems to indicate that of the two the ammonia alum is preferable, chiefly in consequence of its more ready solubility, and that it is a remedy of much therapeutic value. The two Drs. Darrach, of Philadelphia, were the first to use it in this country; and it was first prepared here, for them, by Mr. William Hodgson, Jr., of Philadelphia, who published the formula in the *Amer. Jour. Pharm.* for July, 1856, p. 305. Mr. Hodgson afterward improved the details of his formula, and published the results in the same journal of the same year, p. 478. The results of the observations of Drs. Darrach seems to confirm the statements of Drs. Blyth and Smith, and have led to a more extended use of the salt. Similar in action to perchlorid of iron, it is not stimulant like that preparation, and seldom causes nausea or headahce while as an astringent tonic it is more effective. It is said to be more astringent than common alum, and its tendency to constipate has led to its employment in "choleraic diarrhœa and dysentery," with advantage. Its topical use as an injection or wash is said to be very efficacious. For an abstract notice of this preparation see *U. S. Dispensatory*, 11th edit., p. 1490.

Liquor Ferri Perchloridum. $Fe_2 Cl_3$, +57 per cent. HO. Solution of perchlorid (or rather sesquichlorid) of iron is made by saturating a definite quantity of hydrochloric acid with metallic iron, at a boiling temperature out of contract of air, filtering the solution off the excess of iron, adding one half more of hydrochloric acid, heating the mixture, and then adding nitric acid so long as it produces effervescence. The points of prominent importance in this process are, that there should be no free acid in the solution, and that the combined acid should not be driven off by heating. It is a somewhat difficult preparation to make of a given strength, and under the best conditions for permanency. Even with the utmost care it is frequently found to undergo decomposition by depositing sesquioxyd of iron in its insoluble state, and becoming contaminated with a corresponding proportion of free acid. In such a condition it is entirely unfit for use in surgery, and by its caustic and irritant character is liable to produce most mischievous effects. So liable is it to this decomposition, that it should never be used, even as an hæmostatic, without being tested. This testing is fortunately simple and easy, and is based upon the fact that minute quantities of alkali will not produce a permanent precipitate in an acid solution. If four or five drops of the solution be added to half a test-tubeful of water, and a moistened glass rod which has been held for an instant in the atmosphere of an ammonia bottle be dipped into it, a reddish flocculent precipitate of hydrated oxyd of iron will form about the rod. Should this precipitate be easily redissolved in the liquid by stirring or shaking, it indicates the presence of free acid, and that the preparation is unfit for surgical uses. To guard against the risk of injury, however, and ensure the best chances of success with it, M. Gobley and other authorities think it better to have the sesquichlorid in the solid state, wherein it keeps indefinitely, and make the solution as required. But, beside the difficulty of keeping a substance that is extremely deliquescent always ready for immediate use, the time necessary to make a definite solution and filter it is imcompatible with many of the uses of the perchlorid. The writer has, however, made the solid salt as here exhibited, and has taken the additional precaution of drying in it an excess of the base, so that by no possibility can a recently filtered solution of this salt contain a trace of free acid. By direct experiment with it he has proved, that when after direct exposure to sunlight for some days it deposits a portion of sesquioxyd, and is again filtered, it is still absolutely devoid of free acid. This circumstance shows that in this salt the acid

is supersaturated, or that the solution is capable of dissolving sesquioxyd of iron.

The solution first recommended as an hæmostatic, and for injecting aneurismal tumors, is one containing 43 per cent. of the solid chlorid. It has a density of 45° Baumé, or a s. g. of 1.45. More recent authorities have found this unnecessarily strong, and prefer a solution containing 30 per cent., or s. g. 1.26. But as there is less liability to decomposition the stronger the solution is, and inasmuch as it is very easy to reduce it, the original 43 per cent. solution of M. Pravaz is the proper one to keep in readiness.

This solution, as may be seen in the specimen, is of a very dark brownish-red color, of a somewhat sirupy consistence, transparent, bright, and free from sediment. It is nearly odorless, but has a very rough and powerfully astringent taste.* The solid salt is in reddish-brown amorphous masses of a dirty hue, and is liable to be moist or soft on the surface, unless the stopper of the bottle which contains it be very well ground. It makes a thick muddy solution, and so clogs a filter that much time is required to render it clear and fit for use. In case of emergency, however, it might be used without filtration as the oxyd of iron could do no greater harm than any other inert insoluble matter.

The new applications of perchlorid of iron as an internal remedy in erysipelas, anasarca, scarlatina, and intermittent fever have been too frequently commented upon to require farther notice here, than to remark that in some classes of the first two diseases the weight of authority appears much in its favor.

It is to its surgical uses as an hæmostatic and styptic, that most attention has been attracted of late years, and it is in this relation that it is perhaps most important, particularly for the radical cure of aneurisms and varices by injection. In *Bouchardat's Annuaire de Thérapeutics* for 1853, p. 213, is an account given by M. Rayer to the Académie des Sciences of Paris of some experiments of M. Pravaz, of Lyons, upon animals with this agent as a new means of coagulating the blood in the living vessels. The method being soon after applied in practice to aneurisms by MM. Deslongchamps, Serre, and others, M. Lallemand announced to the Académie that the success which had already attended the method of M. Pravaz, promised better results than any other hitherto used. Upon more frequent repetition, however, the results proved far less favorable, so that by 1854 M. Malgaigne, in a memoir published in the "*Annuaire*

* This specimen is a part of some that was made for the Brooklyn City Hospital in April last, and, although kept without any great degree of care, is perfectly good as yet.

de Med. et de Chir. Prat. for that year, p. 131, says that successful cases are rare, and obtained at such cost in the way of accidents that no prudent surgeon could expose his patients to such a disastrous method of treatment. It afterward became probable that some of the accidents and reverses which stood in the way of this otherwise promising mode of treatment were attributable to the use of solutions rendered mischievous by excess of acid; such solutions producing high grades of local inflammation and irritative fever which often sacrificed the lives of patients. Complicated and troublesome processes were then resorted to in order to improve the chemical character and permanency of the solution, but with only partial and rather uncertain effects, so that the method took a position as an important one certainly, and most valuable under certain conditions.

Upon a late occasion, Drs. Minor and Isaacs used the solution by injection in a case of extensive aneurism, with, as the Society knows, perfect success, yet in their hands, with every precaution taken, the local irritation was so great as to cause the coagulum to be discharged by suppuration. At best, therefore, it must be considered as a preparation of too caustic a nature to be used with security, and since other preparations have been since brought into notice, which are not liable to the same objections in any thing like the same degree, it is probable that it will gradually be superseded in the practice of prudent surgeons, except in special cases.

Liquor Ferri Persulphatis. $2\,Fe_2\,O_3,\ 5\,SO_3,\ +$ 47 per cent. HO, Monsel's solution. This solution is prepared by sesquioxydizing the iron in a definite quantity of sulphate of protoxyd, by means of nitric acid, in the presence of a proportion of sulphuric acid which gives to the salt formed just half an equivalent of acid less than would be required to form the normal, or so-called neutral persulphate. Thus while the normal persulphate, or tersulphate contains three equivalents of the acid to one equivalent of sesquioxyd, this sulphate contains but two and a half equivalents of the acid to one of the base, while the bisulphate contains of course two equivalents of acid to one of base. There are beside these four other sulphates of the sesquioxyd of iron, but in all, except this one discovered by M. Monsel, the proportion of acid diminishes by whole equivalents, hence it seemed probable that it was in composition a tersulphate, holding a portion of sesquioxyd in solution. Although not properly a persulphate, it yet approaches more nearly to that salt in chemical character and composition than to any other, and as there is no prefix used in chemical nomenclature that would denote its composition, and as there is no other form of persulphate commonly used in medicine or

officinal in any pharmacopœia of the English language, the writer in preparing it gave it the above title in conformity with the method of nomenclature adopted in our own pharmacopœia, and because M. Monsel in his original paper calls it in his caption "Nouveau persulphate de fer soluble." From farther observations upon the character of the new salt, however, the writer abandoned the idea that it was a mere mixture or solution of sesquioxyd, but yet could not arrive at any better appellation for it, since all authoritative writers properly condemn the too common usage of applying the names of individuals to compounds that come into use in the materia medica. In this connection it may be worth while to notice a criticism upon this name for this preparation, which appeared as a so-called correction in the *Pacific Medical and Surgical Journal* of San Francisco, for March, 1859, p. 93. The criticism or so-called correction is as wrong as it can be, since, if the salt is to have any outlandish, unchemical name, it must be subpersulphate, and not hypersulphate, because in composition it is below, and not above the normal salt in proportion of acid. The formula for the salt is wrong wherever it occurs in the various numbers of the *Pacific Journal.* The statement that its principal power as an hæmostatic is lost where it is used in solution is also wrong; while the statement that the *dry* salt contains water is rather unusually wrong.

This preparation as proposed in M. Monsel's original paper may be made in three forms, as exhibited in the specimens. First, in the form of solution, containing about 53 per cent. of the salt, of a dark red-brown color, transparent, nearly odorless, but with a rough, exceedingly astringent taste. Secondly, solid, in the form of yellowish-red scales, somewhat like citrate of iron. In this form it contains 25 per cent. of water, and is so deliquescent that it is difficult to keep it in a condition fit for use. Thirdly, in the form of a greenish-yellow, anhydrous, light, spongy powder, strongly resembling tannic acid. This powder is also very deliquescent and difficult to preserve in a useful condition. From the practical difficulties in keeping and manipulating the solid forms, and from the greater convenience of application in solution, as well as from the circumstance that it must be moist or wet, and therefore, in part at least, dissolved in order to be effective, as it is commonly used in this latter form. The tests by which this peculiar salt is recognized and distinguished, as pointed out by M. Monsel, are very simple and characteristic. A drop or two of concentrated sulphuric acid dropped into the solution decolorizes it to a considerable extent, while an excess of the acid converts it into a white, homogeneous, soft solid, like plaster of Paris which has commenced to set.

A specimen which under such treatment does not set like plaster, should be rejected. When the solution is brought in contact with any form of albumen or fibrin it instantaneously forms a firm resisting clot, which is perfectly insoluble, and which becomes harder and swells for some time after. In consequence of this singular property, possessed in so high a degree, it is undoubtedly the most prompt and efficient hæmostatic known, while its value is much increased by its freedom from irritating or caustic effects. These peculiar properties appear to adapt it admirably to the purposes of injecting aneurisms, varices, etc., while its astringent power adapts it equally well to the condensation of spongy tissues, and bleeding surfaces.

M. Monsel, Pharmacien Major to the Military Hospital at Bordeaux, in a memoir addressed to the council of health of the army, on the 20th of July, 1852, made known the hæmostatic properties of the sulphate of peroxyd of iron, and M. Larrey was appointed by the council to examine into the value of this new therapeutic agent. On the 13th of October of the same year he published in the Scientific Correspondence of Rome a letter, in which he characterizes it as the most powerful of the hæmostatics then known. In a thesis upon hæmostatics by Dr. Viennet, read before the Montpellier school, M. Monsel is quoted as believing that in the actual state of science there does not exist a substance capable of coagulating the blood more promptly than the sulphate of the peroxyd of iron. As these statements were published before the experiments of M. Pravaz with the perchlorid, they appear to establish M. Monsel's right to the credit of having first brought into notice the hæmostatic properties of persalts of iron, although it does not appear that he had at that time discovered this new salt, since its peculiar properties are not alluded to until the publication of his paper and formula in September, 1857. See *Jour. de Pharmacie et de Chimie* for July, 1859, and September, 1857.

The writer's notes of the surgical history of this preparation were, with other books and papers, recently lost by fire, and the sources whence the information was compiled are forgotten, so that the writer can only state from memory that upon its first introduction in Bordeaux it was used by some surgeons, and in one or two hospitals of that city and Paris, with great alleged advantage. Then, from the circumstances that the formula for its preparation was freely and liberally published from the outset by M. Monsel—that it is easily made, and comparatively cheap, it appeared to go quietly into frequent use on the continent of Europe without becoming the special hobby of any one, or even the subject of a "*concours.*"

As far as the writer knows, it was first used in this neighborhood by Drs. Hutchison, Minor, and Isaacs, the first named of whom published a notice of its use in several cases, with success, in the *N. Y. Journal of Medicine* for January, 1859. It was soon after used internally, for the first time here, by Dr. T. F. King, alone, in uterine hemorrhage, with prompt success. Still more recently, Dr. D. C. Enos, used it by injection in the treatment of varix, and obliterated the saphena vein without a single untoward symptom. Dr. J. Marion Sims speaks in the highest terms of its use in arresting the hemorrhage which follows operations and accidents about the os and cervix uteri, and relies upon it with a confidence not hitherto given to any agent, including the perchlorid. It has also been used with great advantage by some dentists who have heard of its astringent and hæmostatic powers, and appears to be peculiarly applicable to a large class of their cases. Drs. Toland, Tibbets, and others, of California were among the first to use it in this country, and their notices of its peculiar qualities published *in the Pacific Medical and Surgical Journal* from time to time for a year and a half past, have done much to attract professional attention to it. It has been used in hemorrhage following operations for fistula in ano, and upon the tonsils, and in traumatic hemorrhages, by H. H. Toland ; in Cooper's operation for varicocele, by Isaacs ; in profuse epistaxis, by Hutchison ; in arterial hemorrhage from vessels of difficult access, by Minor ; internally in uterine hemorrhage, by T. F. King ; by injection in varicose veins, by D. C. Enos ; and in hemorrhages from the uterus, by J. Marion Sims. In short, it appears that, as it becomes more generally known, its application and uses seem to place it in an important rank hitherto vacant in the catalogue of the materia medica.

Externally it is applied by means of lint, a small sponge mop, or by a glass rod. Camel's hair brushes do not answer well as they are soon drawn up into a hard knot by the solution. When carefully applied to the exact point desired a very small quantity usually serves the purpose, and this is a point of some importance in cases where profuse application would interfere with the adhesion of surfaces, or union by first intention. Internally it may be given in doses of 5 to 15 drops diluted with water at the moment of administration, and repeated p. r. n. Its useful application might be much extended in the form of astringent injections, washes, etc., except for the circumstance that dilute solutions, unless used immediately, are liable to decomposition. The solid salt, in the form of scales, has been recently recommended by Dr. J. P. Tibbits, of Iowa Hill, California (see *Pacific Medical and Surgical Journal*

for June, 1859, p. 251), as an anti-syphilitic as accidentally discovered by Dr. Toland. When applied to primary chancre, it appears, without any escharotic effect, to decompose the virus and strangle the ulcer.

In 1857, M. Soubeiran among others directed attention to a preparation of persulphate of iron as a styptic and hæmostatic, which was less caustic and less irritant than the perchlorid. But these, as well as the acetate of the sesquioxyd recommended by M. Lusanna, appear to be inferior to that of M. Monsel, so that Soubeiran himself adopts the solution in preference to his own, while in the anhydrous form he considers his preparation as better than the new. (See *Jour. de Pharm. et de Chimie*, September, 1857, p. 210.)

Ferri Pyrophosphas. $2\,Fe_2\,O_3, 3bPO_5$. This salt is prepared by double decomposition between solution of tersulphate of sesquioxyd of iron, and solution of pyrophosphate of soda. It forms, when the reaction is managed at low temperatures, a light, white gelatinous magma, soluble in excess of the soda salt, but insoluble in water.

Since the time when phosphorus and its combinations were recognized as holding the important place they do in the nervous and osseous portions of the animal economy, their use as remedial agents has been looked upon with increasing interest, and soluble easily assimilable salts have been eagerly sought for. The insoluble phosphates of lime, magnesia, and iron, now regarded as almost inert, were commonly used until 1847, when M. Persoz published a paper upon pyrophosphate of sesquioxyd of iron and soda, which from its solubility and the difficulty with which it is decomposed by ordinary reagents he anticipated would one day have important uses in medicine. M. Leras, in 1849, again drew attention to this salt as being, except the potassio-tartrate, the only one which was not instantaneously precipitated or decomposed by the gastric juices. His statements, however, not being received in theory or confirmed by facts, and the salt being soluble only to a limited extent, it failed in general application. After Graham had studied the transformations of phosphoric acid and the phosphates, M. Robiquet, of Paris, took up the subject in connection with this salt, and in 1857 read a paper before the Académie des Sciences in which he showed that citrate of ammonia might be substituted for the soda salt as a solvent, with numerous important advantages, and that a soluble double salt of pyrophosphate of iron and citrate of ammonia might be made to fulfill the two desired indications of being easily assimilated without decomposition, and of being devoid of astringency. It possessed, too, the advantages of being less

stimulating than other preparations of iron, and devoid of disagreeable taste. This paper of M. Robiquet attracted much attention, and was referred to a special committee for investigation. This committee reported in 1858, and from their report, published in the *Jour. de Pharm. et de Chimie* for May, 1858, most of these statements are compiled. When to the well-washed magma of hydrated pyrophosphate of iron, precipitated as above described, solution of citrate of ammonia is added, and heat applied until a perfect solution is obtained, the preparation of M. Robiquet is formed. It is a bright transparent liquid of a greenish-golden color, odorless, but having a slight rather pleasant saline taste. When concentrated by evaporation, and exposed to a gentle heat in thin layers, it dries into greenish-golden scales, which are very soluble, somewhat deliquescent, and possess the sensible properties of the solution. This is the so-called pyrophosphate of iron of Robiquet, but it is very liable to mislead those who apply it in practice by its feebleness, since it commonly contains only about 37 per cent. of pyrophosphate of iron, the remainder being citrate of ammonia and water. Hence, when it is used either in one or even four grain doses, there can hardly be any appreciable effect produced, since the maximum dose would only have one and a half grains of the pyrophospate of iron. It is the pyrophosphate of iron that should be used in doses of 1 to 4 grains three times a day in adult cases where any prompt effects are desirable, and this would indicate nearly three times that quantity of the salt as generally met with. The specimen examined by the writer with the above-mentioned results was from the manufactory of Menièr & Cie, of Paris, and is probably a fair representative of the market value of the salt ; since, on a subsequent examination of the sirup which bore Robiquet's own name and seal, the label of which stated that it contained one per cent. of the pyrophosphate of iron, only 0.12 of one per cent. of metallic iron could be obtained. Taking a teaspoonful of the sirup at 73 grains, in this quantity, allowing liberally for losses in a crude analysis, the quantity of iron salt would be but little over 0.2 of a grain. It appears to the writer that from such doses little effect can be expected and he therefore agrees with Prof. Proctor, of Philadelphia (see *Amer. Jour. Pharm.* for September, 1857, p. 404), that a better proportion for the sirup is one grain of the iron salt to the fluid drachm, this iron salt to be comprised in round numbers of 42 per cent. sesquioxyd of iron, and 58 per cent. phosphoric acid. From the slightly deliquescent character of the scales, and from the difference in the proportion of citrate of ammonia and water, they are not of uniform composition, and as in

common cases nothing is gained by administering a soluble tasteless substance in a solid form, a sirup of uniform composition seems best adapted for the exhibition of this salt, and it is therefore in that shape, though not of uniform composition, that it has been commonly used.

Syrupus Ferri Pyrophosphatis. M. Robiquet has never published his formula for this preparation, nor given any detail of the process by which he makes it, and the editor of the *Amer. Jour. Pharm.*, in his paper on the subject above cited, was the first to publish a definite formula for making it. Judging from its chemical character, and sensible properties, and the statements made concerning it, that a properly made preparation of this salt would prove a valuable addition to the materia medica, the writer determined to offer it for trial, and adopted a slight modification of the formula of Prof. Proctor. The result was the production of a dark-colored, opaque, exceedingly clumsy-looking sirup, nearly tasteless, except for the orange-flower flavor, and which, after standing for a month or two, gave a scanty sediment. In this sediment, however, neither iron nor phosphorus could be detected. The specimen of this sirup now exhibited is some four months old, and has changed but little after the first week or two. When first made, however, it was transparent and bright, and of a rich reddish-brown color. Exposed to air and light for forty-eight hours it deposits a scanty white precipitate, containing both iron and phosphoric acid.*

This sirup was brought to the notice of some members of the profession here, and has been pretty freely used in a number of cases, by a number of observers. Drs. Hutchison, Kissam, Bell, Minor, King, Isaacs, Enos, Crane, and Smith have used it here. Two of these gentlemen used it in conjunction with other tonics and therefore could not judge accurately of its value; Dr. Minor and the writer each used it in one case without any apparent effect. The sum of the opinions of the remainder of the practitioners named, however, is decidedly in favor of its importance as a tonic well adapted to a class of cases not uncommonly met with, where other tonics, and particularly preparations of iron, are not well borne. In no case has it produced tinnitus, headache, nausea, or constipation, as other preparations of iron are liable to do. In one case in which Dr. Bell used it with otherwise good effect, it repeatedly devel-

* Prolonged experience shows that in very cold weather this dark sirup deposits the iron salt in large quantities, so that it can no longer be considered a practical form. The light, or green sirup, however, keeps perfectly, except for a liability to mould at the surface, and can be easily adapted to all the uses of the other by combination with astringents if required.

oped a tendency to diarrhœa, and its administration had to be as often suspended till the appetite would again fall off. Dr. Hutchison also found one similar case in his experience with it. In one of these cases, at least, there was an exceedingly susceptible and irritable condition of the mucous membranes, and in both the effect was doubtless produced by the citrate of ammonia aided by the sugar, and not by the pyrophosphate of iron. The number of physicians who have used this preparation here is probably not double that of those named, while the whole quantity used amounts to about forty-five pounds. If it be fair to infer from continued or an increasing use of it in the hands of those not named, because not heard from in regard to it, that it has had a similar average of success, the deduction would be that in an important though perhaps not a large class of cases its peculiar properties and adaptations make it a valuable and important agent. So much for the dark, inelegant-looking sirup.

In studying the chemical character of this compound salt or solution, after a close examination of all that M. Robiquet and the commission of the Académie had communicated on the subject, the writer found that the formula was imperfect in point of having too small a proportion of citrate of ammonia to effect a complete solution of the iron salt, and that the slight excess of ammonia completed the solution probably by decomposing a portion of the iron salt, and dissolving the liberated sesquioxyd, or rather that the citrate of ammonia performed the part it often does in analytical chemistry, of preventing the precipitation of the sesquioxyd of iron. It then became easy by doubling the proportion of citrate of ammonia, to dispense altogether with the free ammonia, and to make a solution and sirup of a bright transparent character and a beautiful greenish-golden color. In this the orange-flower flavor was omitted, as being, in common with all other flavors, apt to excite dislike or disgust when long continued. This sirup, therefore, as now exhibited, is odorless, but has a very slight saline taste which relieves it from the flat insipidity of simple sirup. It contains one grain of anhydrous pyrophosphate of iron, and between seven and eight tenths of a grain of citrate of ammonia in each fluid drachm. It therefore differs from the old black sirup in containing about twice the proportion of citrate of ammonia, and will therefore excite diarrhœa in a somewhat larger number of instances. It has not yet been fairly tried in comparison with the other, but except in rare instances of unusually susceptible mucous surfaces will doubtless have the same therapeutic effect. While in a larger number of exceptional cases, where a tendency to constipation is to be counteracted, it will be found prefer-

able. The writer would invite those who use this sirup to a close observation of the effects, in order that a more definite opinion may be formed upon its value and alleged advantages.

It is incompatible with vegetable tonics and astringents, although Robiquet makes a contrary statement. It is not, however, incompatible to a degree that would prevent their association in the same case by alternation, or even by admixture provided the mixture be made at the moment of administration.

Potassæ Permanganas. $KOMn^{2,}O^{7}$. This salt is prepared by heating together peroxyd of manganese, hydrate of potassa, and chlorate of potassa in definite proportions, exposing the dried residue to a red heat, then dissolving the soluble portion in water, decanting the clear solution from the residue, and evaporating it until crystals begin to form. The crystals are washed and dried upon porous tiles.

It is in the form of dark-purple or reddish-purple needle-shaped crystals, as shown by the specimen. They are odorless, but have a rough sweetish taste, and are soluble in sixteen parts of water, forming a beautiful purplish-red solution. This is a difficult and expensive salt to make in consequence of the small proportional yield from the materials, from the difficulty of getting basins to stand the evaporation, and from the necessity of excluding every form of organic matter from the process. The cheap article commonly sold as permanganate of potassa, and which has repeatedly disappointed physicians who supposed they were using the proper salt, is in dark-green amorphous lumps, and forms a green or purplish-green solution. This is a crude and variable mixture of manganate and permanganate of potassa containing a large excess of potassa, and is obtained by simply evaporating the first solution of the process to dryness in an iron vessel. It is thoroughly and entirely unfit for medicinal use, or for local application, and is even unfit for common disinfecting purposes in consequence of the caustic potassa which it contains.

The crystallized salt alone should be used, and the solutions made from it should not be filtered, but decanted off from the residue, since all contact with organic matter decomposes the salt. Its action, both as an escharotic and disinfectant, depend upon its great oxydizing power, as it parts with two equivalents of its oxygen instantly on contact with oxydizable substances.

As an escharotic it is used in powder sprinkled upon the part, and is said to produce less pain than other escharotics, while it is equally effective, and possesses the collateral property of disinfecting or deodorizing the surfaces. It is, however, chiefly as a stimulant deodorizing lotion or injection that it is used with

greatest benefit and effect. It keeps down exuberant granulations and controls or destroys morbid growths with unusual promptitude and success, and is susceptible, by varying the strength of the solution, of a wide range of effect from the prompt destruction of morbid tissues down to the most gentle stimulation of granulating surfaces; while its application, in however dilute solutions, serves to cleanse and deodorize the the foulest ulcers. It is said to be peculiarly applicable to those cases of cancerous disease, especially of the uterus which often become almost insupportable from the fœtor of the discharges. By the use of a solution of twenty grains to the pint of water, applied by injection or wash, the offensive discharges are changed at once, and the comfort of both patient and attendants very materially improved. From a proportion of twenty or ten grains to the fluid ounce of distilled water, when a slight escharotic or prompt stimulant effect is desired, down to twenty or even ten grains to the pint as a disinfectant, it has been used with much advantage. It has also been used internally in diabetes, chiefly by Mr. Sampson, of London, in doses of three or four grains three times a day in solution. (See *Pharm. Jour. and Trans.*, July, 1853, p. 18.) As an external remedy it appears to have been first brought prominently to the notice of the profession by Dr. J. F. Girdwood, of London, in a paper published in the *Lancet* of September, 1857, p. 269. An abridgment of this paper may be found in *Braithwaite's Retrospect*, 1858, No. 36, p. 261. A short notice of its uses may also be found in *U. S. Dispensatory*, 11th ed., p. 1447. Other more extended notices are published in the *Lancet* for 1858, p. 33, and in the *Pacific Medical and Surgical Journal*, 1858, p. 331.

Sodæ Chloras. $Na.OCl.O^5$. This salt is made for medicinal purposes by decomposing a solution of bitartrate of soda with solution of chlorate of potassa, and evaporating the resulting solution to the point of crystallization. The crystals are drained and dried, and kept in well-closed bottles.

As commercial chlorate of potassa is very impure, this salt when made from it is apt to be contaminated with chlorid of sodium, nitrate of soda, and bitartrate of potassa. But these impurities are in so much smaller proportion than in the potassa salt that they may almost be disregarded. It is in the form of white tetrahedral crystals, of a fresh pungent saline taste. It is slightly deliquescent, and soluble in three parts of water.

It has been proposed and successfully used as a substitue for chlorate of potassa in almost, if not quite, all the cases in which that salt is indicated, with the advantages of being far more soluble, less disagreeable to the taste, and more free from impurities.

It is used in the same manner and same quantities as the potassa salt, but requires only one fourth of the water for its solution. See *Lancet*, June, 1858, p. 595.

In closing these cursory notices of some of the prominent new remedies, the writer asks the earnest attention of the Society for a few moments to the collateral subject of old remedies in a new dress.

It has become quite fashionable among physicians of late—and it is believed the custom is steadily increasing—of prescribing dragées, granules, or sugar-coated pills, and fluid extracts, which are imported or made extensively as special articles of wholesale manufacture. It is probable that this medicine made easy, is coming into general use, because the convenience of it to the physician and patient has led both to overlook its real character and importance. If the physician will give to it the thought and consideration that it really deserves, he will hardly fail to arrive at the conclusion that it is emphatically a step in the wrong direction, since it not only removes the responsibility from the dispensing pharmaceutist entirely, but completely dissipates it in the atmosphere of commercial trade and competition, thus removing still other classes of important remedies from beyond the reach and control of the physician and pharmaceutist. The competition in this branch of business, fostered as yet only to a limited extent by popular favor, has grown into such commercial importance that already four or five large domestic manufactories advertise their pretensions to compete with those of foreign origin; while attractive advertisements, setting forth the alleged advantages and standard character of each, are to be seen on the covers of many prominent journals. If it were possible to have faith in the truth of all that could be said in advertisements there might be some safety in this system of medical confectionary. But taking the tendency of competition in trade as we find it in connection of the market for medicinal substances generally, the only safe rule for the profession to adopt is that of contracting the compass of responsibility within the narrowest possible limits. Hence the writer would suggest as a rule for practicing physicians, to send their prescriptions only to such pharmaceutists as make their own pills and fluid extracts with known ability, and that they urge upon such pharmaceutists, as a basis for their reliance and support, that all articles to which reliable tests can not be applied should be made, and not purchased. In pursuing such a course, and supporting pharmaceutists in charging liberal prices for articles of their own making, physicians would do much to elevate the character of that science and art of pharmacy upon which they must always depend.

While by the opposite course of fostering cheap and easy wholesale medication, they debase the character of pharmacy to the level of common trade, since the pharmaceutist has less access to the interior of his commercial pills and extracts, than the book clerk has to the contents of the volumes he offers for sale, while the responsibility for the character or quality of such contents is about the same in either case.

It is doubtful whether laws consistent with the spirit of our system of government can be enacted that will regulate, limit, or control any branch of trade, and therefore the professions of medicine and pharmacy, must rely upon their joint moral influence to protect and defend the neutral ground upon which their true interests are blended; and the more completely they harmonize in their naturally close association, and the more determined activity they exhibit in support of every well-matured step in liberal advancement, the more will their common standard be elevated, and the better will be the defenses against the subtle influences and covert inroads of all these various forms of quackery.

Notwithstanding the success of nostrums and quacks both in and outside of both professions, it must be evident upon due reflection, that a large mass of the educated people of all countries, have a firm reliance upon the legitimate practice of medicine. This reliance being always based upon correct reasoning to tangible results, it follows that every well-directed, well-sustained effort to protect the agencies which enter so largely into these results, must tend to extend the boundaries of this confidence in the only permanent and effective manner.

Case of Housemaid's Knee.—By C. E. Isaacs, M.D.

On the first of June, 1859, I was consulted by Mrs. B., residing in Atlantic Street, on account of an injury of the knee, which she had sustained three months previously by falling upon one of the brass hoops of her skirt, which was violently pressed, by the whole weight of her body, between the patella and the ground. On examination, I found that the inflammation excited by the injury of the bursa over the patella had resulted in the effusion of serum into that cavity, thus constituting what is generally known as "housemaid's knee." The tumor was about the size of a turkey's egg. I introduced a tenotomy-knife into the sac, and through a small opening there escaped about two ounces of yellow transparent serum, followed by about two drachms of fluid blood. The small wound rapidly healed, but in a week, the tumor was of the same size as it was before puncture. I then passed a seton, consisting of four coarse silk threads,

through the tumor, and at the same time, after having evacuated the fluid, I injected into the sac three drachms of tincture of iodine, and enjoined rest. The seton was allowed to remain three days, until considerable pain, redness, and tenderness of the integuments over the bursa supervened, when it was removed—at the end of a fortnight, the appearance of the part was the same as when I first saw it. I then made a vertical incision, an inch and a half in length, upon the anterior surface of the tumor, and came down to the surface of the sac, which was white, shining, and much resembled ligament. The point of the knife was then insinuated between this shining surface of the cyst or sac and its integumentary coverings, and thus separated these parts sufficiently to cut out of the wall of the sac an oval portion, about an inch long and half an inch wide. This piece thus removed was about one sixth of an inch in thickness. Its internal surface was very red and vascular (examined subsequently under the microscope, it exhibited loops of capillaries, and an imperfect epithelium; the wall of the sac consisted of white fibrous tissue). As soon as the serum had entirely escaped from the sac thus opened, I penciled the interior three or four times with the compound tincture of iodine. I then took a strip of muslin, a foot and a half long and half an inch wide, saturated with sweet oil, and gradually introduced it into the cavity of the sac, until this was nearly filled with it. The edges of the wound were then slightly approximated by strips of adhesive plaster—rest was strictly enjoined, but at the end of the third day, as the parts seemed to be very slightly disposed to take on inflammation, I allowed the patient to walk around the house. On the fifth day considerable inflammation having occurred, I removed the strip of muslin, and again applied the adhesive strips, but in such a manner as to leave a large opening, from which an imperfectly elaborated pus afterward escaped. After some days, the tumor began gradually to diminish, and became much harder to the touch. This shrinking and contraction of the sac steadily progressed, and at the end of July it was about the size of a small nutmeg; on the 10th of September it was ascertained that every vestige of the disease had disappeared.

Case of Strangulated Hernia, in a female, æt. 90.—By C. E. ISAACS, M.D.

At 11 P.M., on the 10th of July, 1859, I was called to see Mrs. H., a lady ninety years of age, and whom I found to be laboring under strangulated hernia. I ascertained, that her health had always been remarkably good, and that her mental and physical faculties had retained their vigor to an

extent unusual with persons of her age. The symptoms of strangulation had existed about twenty-four hours. During the most of this time there had been nausea and vomiting at frequent intervals, and occasionally pain in the bowels; there was also constipation. The pulse was 84 and small, expression of countenance almost or quite natural, no restlessness nor anxiety. On examination, I found a small femoral hernia, about the size of a pigeon's egg. It was tense and unyielding, and there was no impulse on coughing. There was no tenderness on pressure of the abdomen, which was only slightly distended. As efforts to reduce the hernia had been made by the family physician before my arrival, and as the parts seemed to be tightly strictured, I made only a very slight and very gentle trial of the taxis, but immediately proceeded to the operation, which was performed at midnight. I was assisted by Dr. J. M. Minor and Dr. D. C. Enos, Surgeons of the Brooklyn City Hospital. Dr. Enos placed the patient under the influence of a mixture of one part of chloroform to two parts of ether, which soon produced perfect insensibility. The skin and coverings of the hernial tumor were successively divided in the usual manner, until I arrived at the hernial sac. This was then cautiously opened. It contained a small portion of omentum, and also of small intestine, not larger than the last joint of the forefinger. It was of a dark-claret color. The stricture was so tight that it was with extreme difficulty I could insinuate the point of Cooper's knife underneath it. This, however, having been done, I divided it slightly, and in a direction upward and inward. The intestine instantly became of a lighter red color, and passed up into the cavity of the abdomen. The wound was brought together by sutures and adhesive strips, and a bandage was applied. The patient had no pain after the operation, nor the slightest unfavorable symptom, and the case progressed rapidly to perfect recovery. On the fifth day after the operation the wound had united by first intention. More than two months have elapsed since the operation, and the patient is now in good health. The case just related is perhaps interesting, as showing that even very advanced age does not necessarily contraindicate the use of chloroform, and that surgical operations may then be performed under its influence with a reasonable prospect of success.

ART. III.—*Sclerotico-choroiditis Posterior; with Cases and Illustrations.* By HENRY D. NOYES, M.D., Assistant Surgeon to the New York Eye Infirmary.

THE examination of the posterior segment of the eye by means of artificial light reflected upon it, has brought to view many pathological conditions with which oculists were formerly imperfectly or not at all acquainted, and has imposed upon them new labors in endeavoring to establish their seat, their nature, their succession, and, so far as possible, their causes. When means of investigation have been but recently introduced, much obscurity must yet remain; yet, before all the details have been elucidated, much is done in establishing a correct diagnosis, and important aid is offered in settling the question whether treatment is likely to prove beneficial. In revealing opacities of the transparent media, the crystalline lens, its capsule, and of the vitreous body, the ophthalmoscope is almost unerring. Specks and striæ in the lens are clearly seen with a dilated pupil, and the same is true of deposits upon the capsule. In one instance the diagnosis is rather difficult, namely, when the opaque spot is situated upon the centre of the posterior capsule, no other opacity being present. The reason is, that the speck is so close to the mathematical centre of the globe that when the eye is moved in different directions it can make but a very slight amount of motion, and seems to coincide with the reflex from the surface of the cornea. This difficulty can be obviated by looking from a point a little more sidewise, and also by *inspecting* the lens obliquely under light concentrated upon it by a double convex lens.

The existence of particles floating in the vitreous humor, whether shreds of fibrin, or blood-clots, or the presence of the cysticercus, or the more-diffused and less-discernible turbidity of the humor, is made known by the light of the ophthalmoscope.

The impairment of vision which sometimes follows iritis, where the pupil is not obstructed by lymph, and its margin but slightly or not at all adherent to the anterior capsule, is often well explained by the discovery of flocculi of plastic exudation into the corpus vitreum, proving that the inflammation had extended to the ciliary body. The examination of the optic nerve, the retina, and the choroid coat requires more careful inspection and a practiced eye.

To decide the nature of the discovered lesions is not always easy, and often, though sight is impaired, nothing is revealed to the most expert scrutiny. There are sources of fallacy to deceive the observer, and there may be functional disturbances which leave no visible trace. It is proper to observe that concentrated light should always be used with caution, not too

long protracted, and often only a very weak reflection—which, however, with a dilated pupil, will generally be sufficient.

Cases of sudden blindness, partial or total, often present the most striking appearances to the ophthalmoscope. Sometimes the loss of sight occurs at once, and remains in this condition; at other times it occurs at successive stages, while in the intervals, the vision remains stationary. The following case presents the latter features:

A. B., a man of about 45 years, born in Ireland, a porter, had noticed, six weeks before coming to the Eye Infirmary, that his sight began to fail. He was at that time indulging freely in intoxicating drink, and had long been given to intemperate habits. Notwithstanding the warning from his eyes, he did not abate his spree, and two weeks before coming to the Infirmary, he noticed another marked diminution in his sight. When he came for advice, his flushed face, tremulous hands, and fetid breath showed the depth of his potations. The eyes, to external appearance, showed nothing abnormal: the pupils active, the conjunctiva but little congested. He was unable to read large print with either eye, nor could he do his work, yet could guide himself on the street. Examined with the ophthalmoscope, the media were found clear, but in the substance of the retina were seen numerous streaks of blood. They were nearly all situated beside of, and running parallel with, the larger vessels, sometimes spreading over and concealing them. The streaks were disposed in a radiating form, and were generally not more than two or three times the breadth of a vessel. They did not occur upon the macula lutea, but were very near it both above and below. The hæmorrhages were not found in the peripheral portions of the retina, but confined to its central parts. In each eye was a single patch of larger size than the rest; in the left it was a little distance above the optic nerve, of irregular form, having about the breadth and twice the length of the diameter of the optic disc. The surfaces of the optic nerves presented an unnaturally rosy hue, and the vessels passing through them were turgid and thickly clustered together. This, then, was apoplexy of the retina. No traces were found of former extravasations, but it is fair to presume that such had taken place, and been absorbed.*

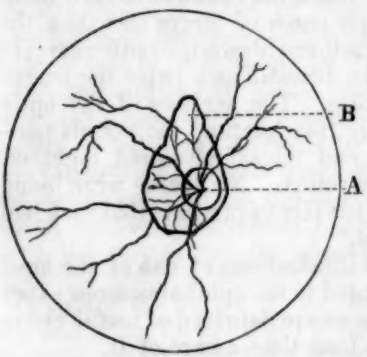
The two following cases are illustrations of one of the most frequent forms of disease presented to the ophthalmoscope; they show, moreover, how often persons are deprived of useful vision in one eye without being, for a long time, aware of it.

Case 1.—Mary J. B., married, aged 25, residing in Newark, on Thanksgiving-day was playfully struck in the face by her hus-

* After three months the patient was again examined and the blood had entirely disappeared—his vision had much improved.

band, receiving the blow upon the right eye. She was unconscious of any effect upon her vision until, in handling white clothes soon after, she found they appeared to be sprinkled with black specks, and then she noticed that she could see only very indistinctly. She had had no pain, nor could she relate any other symptoms. She was cupped and blistered, and took purgative medicine by the prescription of her usual medical attendant, but with little benefit. After four weeks, she came to the Eye Infirmary. She still had vision enough to go alone in the street. An ophthalmoscopic examination was not carefully made of the right eye, because it was deemed imprudent to submit it long to a strong light. The vitreous humor appeared to be hazy. It was, however, noticed that in the other eye there was a divergent strabismus, not permanent, but occurring when the patient made an effort to look attentively. In this eye was seen the disease called by Prof. Graefe, of Berlin, "sclerotico-choroiditis posterior," by others called staphyloma posticum. The media were clear, and the optic nerve healthy; but instead of appearing as a white or grayish disc upon a red ground, it was placed upon a glistening white surface, which reflected the light much more strongly than itself. The nerve seemed much smaller than usual, and the focus of the reflected image was brought closer than usual to the patient's eye. This white surface was limited by an irregular border, making a patch whose greatest breadth was upon the temporal side of the nerve, and its greatest length in a vertical direction. The form and proportion were something like this sketch.

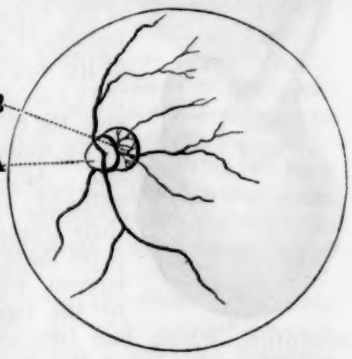
The contour of the optic nerve was darker than usual, and the border of the white figure likewise made dark by deposition of pigment. Across the white surface numerous fine branches of the vessels were running, and seemed as if due to increase in the vascularity of the membranes. This, however, was only because the normal vessels of the retina were brought into brighter relief by the surface behind them, and at the opposite border of the figure most of them again disappeared in the substance of the retina. Upon narrow inspection, a few specks of pigment were seen upon the white spot, and traces of the choroid not entirely removed. As has been stated, the eye was seen to be strongly myopic, and, upon testing the patient, this was corroborated. She could not



read print of ordinary size upon a card at a greater distance than four inches, and could read it when brought to within two and a half inches. It was impossible for her to discern objects distinctly across the room. She had not used this eye much for twelve years, and says that she first found its function impaired after recovering from small-pox. Her mother noticed then that her eyes had a strange and staring look. The probability is that the strabismus then began to be noticed, but this was only at a certain stage in the disease. The changes had probably been going on for some time previous, until the eye became so myopic, as well as amblyopic, as to interfere with the other which remained healthy. To get rid of the disturbance produced by the unequal refractive power of the eyes, the function of the left was involuntarily suspended, by allowing it to deviate from the axis of vision when the patient desired to see distinctly. Even now, where the previously better eye had become the worse, the habit of divergence on the part of the left eye remained.

The nature and progress of the injury to the right eye can not be more clearly stated, since the patient did not continue in attendance.

Case 2.—Thomas Bergen, æt. 28. In August last his left eye was destroyed by the explosion of a percussion cap. Some time afterward he came to the infirmary for advice respecting the remaining eye. Sympathetic irritation was found to be set up in it, and the injured globe was extirpated with a certain degree of beneficial effect. He was, however, extremely near-sighted, and this induced an ophthalmoscopic investigation. He was found to have sclerotico-choroiditis posterior, as indicated by a white crescent-shaped patch beside the outer border of the optic nerve. The form and relation were like the sketch.



The diminished size of the optic nerve and the vessels proved objectively the myopic condition of the eye. The border of the nerve next the white crescent was made black by deposit of pigment, and on that side the disc was not perfectly circular. It is easy to overlook the small spot where the choroid is wanting, in a case like this, and consider the whole as comprising the optic nerve. Fine capillaries could be seen crossing the atrophic crescent, and the remainder of the choroid showed indications of pigment maceration. The

patient's reading distance was from two and a half to five inches for print of ordinary size. He could not tell a person's features at twenty feet distance. He had never observed any difference in his eyes prior to the injury in August. He used his right eye in the measurements necessary in his trade as carpenter, but says that for many years he had always employed the left eye in shooting a gun. This renders it probable that the right eye had long been the seat of the morbid changes. The patient was twice cupped and found his sight made clearer. After being about a fortnight in the infirmary, he left.

The disease to which these two cases belongs has been described generally under the name of staphyloma of the sclerotica. and supposed to be of rare occurrence in the posterior region of the eye. Wardrop says that he has never observed an example of it. Travers does not allude to it, neither does Mr. Tyrrell. The earliest description which I have been able to find is given by Scarpa, who found two specimens upon post-mortem dissection, and has left sketches of the exterior form of the globes. The appearances are so striking, that I am tempted to reproduce his figures and his descriptions. See Brigg's translation of Scarpa. London, 1818, page 399. "It has never occurred to me, indeed, even once, to see any tumor or elevation of the sclerotica, or its anterior surface, corresponding to the white of the eye, in the form of staphyloma; on the contrary, what may seem extraordinary, I have twice happened to meet with the staphyloma of the sclerotic coat in its posterior hemisphere, in the dead subject, where I do not know that it has been seen or described by any other. The first time was in an eye taken from the body of a woman 40 years old, for some other purpose. This eye was of an oval figure, and upon the whole larger than the sound one of the opposite side. On the posterior hemisphere of the eye, and on the external side of the entrance of the optic nerve, or on the part corresponding to the temple of that side, the sclerotica was elevated in the form of an oblong tumor, of the size of a small nut. And as the cornea was sound and pellucid, and the humors still preserved their transparency, on looking through the pupil there appeared within it, toward the bottom, an unusual brightness, produced by the light penetrating that part of the sclerotica, which had become thin and transparent where it was occupied by the staphyloma. When the eye was opened, I found the vitreous humor entirely disorganized

and converted into limpid water, and the crystalline lens rather yellowish, but not opaque. When the posterior hemisphere of the eye was immersed in spirits of wine, with a few drops of nitrous acid added to it, in order to give the retina consistence and opacity, I could perceive distinctly that there was a deficiency of the nervous expansion of the retina within the cavity of the staphyloma; that the choroid coat was very thin and discolored at this part, and wanted its usual vascular plexus; and that the sclerotica, particularly at the apex of the staphyloma, was rendered so thin as scarcely to equal the thickness of writing-paper. I knew that the woman from whom the eye had been taken had lost the faculty of seeing on that side some years before, during an obstinate ophthalmia, attended with a most acute and almost habitual pain in the head.

"The same observation I had an opportunity of making on an eye accidentally taken from the body of a woman 35 years of age, and politely sent to me from Milan by Dr. Monteggia, who has distinguished himself by his excellent medical and surgical writings. This eye was also of an oval figure, and larger than the opposite one. The staphyloma of the sclerotic coat occupied its posterior hemisphere on the external side of the entrance of the optic nerve, or on the side next the temple. The vitreous humor was converted into water; the capsule of the crystalline was exceedingly turgid with a whitish diluted fluid; the crystalline yellowish and less than natural; the retina deficient within the staphyloma; the choroid and sclerotic coats forming the tumor were rendered so thin as to admit the light. Dr. Monteggia could not furnish me with any thing positive respecting this woman's sight before her death. It is remarkable that in both the cases now described, the staphyloma of the sclerotic coat was situate on the external side of the entrance of the optic nerve."

Mackenzie partly quotes the above descriptions, but adds nothing to them. It may be remarked that he bestows upon the disease the name of sclerotico-choroiditis.

Lawrence alludes to cases figured by Von Ammon, but I have been unable to consult the work.

Professor Arldt, of Vienna, in writing upon short-sightedness, *Krankheiten des Auges*, 1856, p. 238, gives a detailed account of four cases where he made a dissection of the eyes, knowing that the individuals had during life been extremely near-sighted. The case most strongly pronounced was that of the

wife of a professor, who was for many years under his observation. The eyes measured respectively fourteen and thirteen and a half lines in antero-posterior diameter. The description of the morbid appearances it is needless to relate. These had advanced to an extreme degree, and the symptoms were as follows: "A. F. for many years had worn concave glasses of four inches focus, but during the last six or seven years had been obliged to use No. $3\frac{1}{2}$. In early childhood, after an attack of measles, she became very near-sighted; for thirty years had often asked medical advice because of inflammatory and congestive symptoms which threatened amaurosis. In the left eye she had for four or five years shown the signs of amaurosis of the central part of the retina, inasmuch as she was able to see with only the lateral parts of the retina, no matter how closely the object was made to approach. Neither with concave glasses, nor by looking through a fine hole in a card, could direct vision with the macula lutea be made possible. For this reason I had during the last three years entirely prohibited the use of concave glasses, although the compulsory idleness was very irksome to her active mind. During her last illness, which continued during a half year, the condition of the eyes decidedly improved, with the exception of the central paralysis of the left eye. She did not complain so much of sparks and colors and of occasional herniopia: an improvement which I attributed to the more complete abstinence from writing, sewing, etc. I will only add that A. F., in her childhood, as well as her three sisters, enjoyed perfect sight, and that only one brother is short-sighted." Professor Arldt very briefly alludes to the detection of this change in the posterior segment of the eye by the ophthalmoscope.

Sichel, in a paper written in 1842, and published in *Graefe's Archives für Ophthalmologie*, Band iii., 2 Abth., p. 211, describes all the forms of staphyloma found in the sclerotic under the name of staphyloma choroideæ. He divides the subject into staphyloma choroideæ anticum, staphyloma corporis ciliaris, and staphyloma choroideæ posticum. Of the latter he says, "The posterior choroidal staphyloma is essentially the same as the anterior: like the latter, it is the result of an inflammation of the choroid and retina, sometimes also of the sclerotic, taken in connection with the thinning and agglutination of these membranes. This agglutination is at times only imperfect, but generally it is firm and inseparable over the whole extent of the staphyloma. Here and there may be found other points of agglutination of the membranes without staphyloma. All the three tunics participate in the adhesion, and yet it is found more frequently simply between the sclerotic and choroid.

The latter membrane is that which first suffers and undergoes greatest alteration by the disease. The progress of the affection, which can not be observed during life on account of its deep situation, and therefore is often overlooked, is slower than that of anterior staphyloma. It is the product of chronic inflammation ; and from causes as yet obscure it comes almost always upon one fixed spot, namely, upon the outer side of the optic nerve. At a later period a second and smaller staphyloma will form upon the opposite side of the nerve. This appearance of staphyloma upon the outer aspect perhaps depends upon the fact that the sclerotic is thinner here, and that according to Jacobson and Werle there is in the normal condition a certain amount of fluid between the choroid and sclerotic. Perhaps, however, this small quantity of fluid is the product of inflammation, which is excited most easily in this very spot, and, if not intense enough to cause adhesion of the membrane, results in a limited effusion of serum. It is certain that the effusion is not the essential cause of the staphyloma, and that no staphyloma choroideæ can be produced by the effusion of fluid between the sclerotica and choroidea, or between the latter and the retina. I have never, in numerous dissections of fresh eyes, found such an effusion. Whereas, in specimens which had for a long time been preserved, I have always found adhesion, so that there can be no thought of serous effusion between the tunics. In Jacobson's case hydrop sub-choroidialis had accidentally taken place, but was by no means to be regarded as the cause of the staphyloma, as will be further shown. On the contrary the cause consists in the adhesion.

"The microscope exhibits in the choroidal and ciliary staphyloma nothing but a thinning of the choroid, without softening in other parts of its extent. In its internal structure there is nothing seen but a tolerably large quantity of amorphous tissue, having little consistence, and containing fibroplastic elements. In the later periods of choroidal staphyloma the choroid becomes yet thinner and reduced to its stroma alone ; the retina loses its natural characteristics, its elements no longer are recognizable, being substituted in part by fibroplastic elements. When the retina and choroid are adherent, the former becomes thinned, and sometimes for a certain extent of surface disappears."

M. Sichel gives a detailed account of the dissection of two cases of posterior staphyloma, but the account of symptoms during life is very meagre. He says that in extreme cases the great protuberance causes strabismus convergens, exactly similar to ordinary muscular strabismus. But he has entirely omitted the myopia so characteristic of these cases, and this

affords a ready explanation of strabismus without supposing the necessity of a swelling of the posterior part of the bulb so great as to act mechanically.

Since the light of the ophthalmoscope has been shed upon the eye, the obscurity attending the beginning of this disease has quite disappeared. Professor Edward Jaeger, in his plates, *Beiträge zur Pathologie des Auges*, gives two illustrations which are very characteristic: one, of the disease in moderate degree and purely local, the other more extended and complicated with general atrophy of the choroid coat, as shown by the removal of its superficial layer of pigment. The former case is that of a person twenty-five years of age, who from the age of five had been near-sighted, and at fifteen began to wear glasses. These were of ten inches focus, and he had never been obliged to change them. Without them he read the finest print, No. 1 of Jaeger's test scale, at from two and a half inches to nine inches, and the coarsest print, No. 20, at twenty-five inches. In all respects, saving myopia, the symptoms were those of healthy eyes. The second illustration belongs to a patient of forty-five years, of scrofulous taint, myopic from childhood, and having suffered many things indicating congestion and inflammation of the choroid, such as feelings of pressure in the globes, appearances of colors and light, also vertigo. The external aspect of the eyes was normal in all respects. He could read with the right eye print No. 4, which is equivalent to ordinary newspaper type, only at one and a half to three inches distance; with the left, print No. 8 at two to four inches distance.

M. Desmarres, *Maladies des Yeux*, vol. 3, page 428, devotes a chapter to the subject, illustrated with wood-engravings.

In the *Ophthalmic Hospital Reports*, of the Royal Ophthalmic Hospital, Moorfields, London, is a paper by Dr. Bader upon *Some Points connected with Near or Weak Sight*, vol. 1, page 116. It describes the usual appearances of the early stage of the disease, but contains one remarkable statement: "This crescent (which is seen adjacent to the entrance of the optic nerve), and with it the short sight, I have seen disappear in a patient after her third confinement." This recovery is quite contrary to the ordinary course of the disease. There are given two excellent colored plates of the ophthalmoscopic appearances. There are also given plates and accounts of other cases, which would seem to be the same disease in a more advanced stage, but not associating them with the former cases. Dr. Bader gives the microscopic examination of an eye, in which the vitreous had become fluid: "The retina being spread on glass, its hyaloid surface showed the following

appearances: to the extent of the white patch the nerve-tubes are indistinct, and the field is dimly granular; at its edges the nerve-tubes form dark shaded bundles, which, further on, assume their normal appearance; the nerve cells are distinctly seen beneath the abnormal as well as the normal portion of the optic nerve-fibres. The hexagonal cells, to the extent of the retinal changes, are deficient; a few brown pigment spots are scattered over the choroid, which is transparent to the extent of the retinal defect. The connections between retina, choroid, and sclerotic are normal; the sclerotic considerably thinned—most so round the entrance of the optic nerve. The hexagonal layer and choroid, while subjacent to the transparent retina, are normal." No allusion is made in this dissection to any protrusion of the sclerotic posteriorly, although it was thinned, because it was ruptured before the examination was made, and of course its form could not be described.

After this lengthened account of what has hitherto been known of the disease, the following may be given as the present knowledge on the subject:

Symptoms.—The only rational sign, to borrow the language of auscultation, in the uncomplicated cases, is myopia. It is important to note that this has at some time been suddenly developed, or has rapidly increased. This myopia, however, can not be perfectly corrected by concave glasses; the patient is obliged to hold the object unnaturally close in spite of them.

The objective signs, as revealed by the ophthalmoscope, are the discovery of a white line usually upon the temporal side of the optic nerve, separating it from the margin of the choroid coat. The line is at first faint, and might be thought to be merely a slight shrinking away of the choroid; it soon acquires a crescentic form, the horns and concave side applied to the nerve. If it increase in extent, it may take any irregularity of form. It spreads most rapidly toward the macula lutea, it may completely surround the optic disc, leaving it insulated. When of long duration and extensive, the borders of the figure are frequently indented with angular and projecting tips; these tips being at the points of entrance of the posterior ciliary arteries, which offer mechanical hinderance to the atrophic process. The border of the spot is marked by a black line of pigment, both upon the choroidal edge and upon the contour of the optic disc—unless the disease be just commencing or be advancing rapidly. If the white patch be large, specks of pigment may be scattered over its surface, and a few traces may be seen of the chorio-capillaries. The branches of the arteria and vena centrales retinæ cross the white spot, and shine with unusual distinctness upon the bright surface behind them. Because of the

clear relief into which they are brought, the finer twigs, usually not noticed, are brought into view, giving the appearance of undue vascularity. When the white spot or crescent is small, it may easily be overlooked and be supposed to belong to the optic nerve; but when larger, the difference in the intensity with which the two surfaces reflect the light becomes apparent. The denuded sclerotic coat shines through the retina with greater brilliancy.

The disease is considered as a circumscribed inflammation of the choroid and sclerotic tunics, such as takes place in the anterior portions of the choroid, and in the ciliary body. The retina is always found covering the white spot, sometimes small grayish spots are scattered over it, but these are not constant. Under the microscope its elements are found altered, as described by Dr. Bader and M. Sichel. In the disease found in a rabbit's eye, Dr. Weber observed the layer of rods and cones much deranged, as if mechanically broken. The choroid suffers to the greatest degree. The hexagonal pigment cells, or at least their contents, are always removed, and the chorio-capillaries, if not quite gone, becomes much atrophied. There may be exudations of plastic lymph upon this spot, and the choroid and sclerotic are generally closely adherent to each other. The sclerotica becomes exceedingly thin, and yields to the pressure of the contents of the globe, forming the staphyloma. This increase in the antero-posterior axis of the eye, necessarily alters its dioptric conditions. The retina is removed to a plane behind the natural focus of the refractive media; and to compensate for this, the object must be brought closer to the cornea, that its image may be formed in the retina. This is the ready explanation of the myopia. Besides bringing the object closer to the eye, the patient taxes his power of accommodation to the utmost to gain a distinct image on the retina, and, this increasing, the intra-ocular pressure tends to increase the projection of the sclerotic.

The complications which are liable to take place are, first, changes in the vitreous humor. These are, the occurrence of opacities which are of two forms, either delicate semi-transparent membranes, which slowly float up and down, and become distinct by being thrown into folds; or, secondly, minute points, or molecules, filling the humor, and giving it a general hazy aspect. The former may be supposed to be the thickened and degenerated septa of the hyaline membrane; the latter are due to sero-bloody effusions, and always appear suddenly. This latter effusion prevents the observer from getting a sharp view of the retina. Besides the occurrence of opacities, the vitreous may become, in whole or in part, liquefied; it may be diffluent only

at its posterior portion, or totally, so as to cause the iris to be tremulous. In connection with these changes in the vitreous, an opacity is often developed upon the posterior pole of the crystalline lens, and this may increase to complete cataract. When the staphyloma is considerable, the retina may become separated from the other membranes at the projecting spot, and the subjacent space be filled with serum. This separation is very likely to increase by any addition of pressure, and by the flow of the serous fluid to the bottom of the eye, pushing off the retina. In this case, the upper half of the patient's field of vision will be entirely obscure. Sometimes the "yellow spot" becomes the seat of serious changes, namely, increased deposition of pigment, with atrophy of the choroid. In these cases, the patient will complain of a central shadow always before his sight.

As described in cases condensed from Prof. Arldt and Prof. Edward Jaeger, the choroid in general may be involved in congestion and chronic inflammation. This will be evidenced by luminous and colored spectra, and with feelings of tension and occasional pain in the eyes; at the same time the iris may show no sign of the mischief going on in the posterior parts of the great vascular coat of the eye. The pressure upon the staphylomatous portion of the globe may become so great as to cause depression of the optic nerve. It may be seen by the ophthalmoscope to become hollowed, in this case vision rapidly declines as the result of the paralyzing influence of pressure upon the nerve-fibres.

An examination of the dark spots in the field of vision, caused by the normal insensibility to light of the surface of the optic nerve, shows that, in the more advanced cases of sclerotico-choroiditis posterior, this dark spot is increased in area, although not always absolutely without any perception of light. When the white patch in the eye is extensive, its brilliant reflection of rays upon other parts of the retina causes confusion in the perception of images, and dazzles the sight.

In consequence of the different refractive power of the two eyes, when the disease is confined to one only, the vision of the affected eye interferes with that of the other, since the focal distance must be different for each. On this account, patients usually suppress involuntarily the impression on one eye, and to do this more perfectly, strabismus often takes place. The affected eye may deviate either outward or inward, causing strabismus, divergens, or convergens.

Lastly, other parts of the choroid and sclerotic may become affected causing staphylomata at the equator and at the anterior parts of the globe.

An important point to settle is, whether the disease be stationary or progressive. It may be known to be progressive if the patient has pain in the brow and temple; if there be luminous and colored phantasms; if the myopia is increasing; by the ophthalmoscope, if the edge of the choroid be not limited by a black border of pigment, but the white spot gradually shades off into the choroid; if other white spots appear at neighboring points and detached from the original one. This is the chief point of diagnosis, because upon it depends the mode of treatment.

The duration of the disease is indefinite. Restitution of the choroid and reduction of the staphyloma can not be expected. On the contrary, when once stationary, the disease will remain *in statu quo* for very many years.

Prognosis will be based upon the present state of the disease and the existence of complications. If there have been but little change, and the condition be stationary, prognosis is good. A slight haziness of the vitreous may clear up. Detachment of the retina and fluidity of the vitreous are incurable.

Causes, according to Prof. Graefe, are two-fold: first, congestions of the eye, following congestions of the head, constipation, or other venous obstructions; and, secondly, the undue taxation of the power of accommodation. This occurs in straining the eye over fine objects, in working in a dim light, and in the use of ill-fitting spectacles. The mischievous effect is produced by direct muscular pressure of the tensor choroideæ and by hinderance to the venous circulation.

Treatment.—This must be settled by the condition of the disease. If it be on the advance and active, as known by the pain in the brow and temple, and the signs enumerated above, the antiphlogistic plan must be carried out proportionate to the patient's strength. Blood to be taken from the temple by cupping or the artificial leech, not by natural leeches, as the stream is too slow to affect the deep circulation of the eye. After the abstraction of blood, the patient should go to bed and remain twenty-four hours in a darkened room, to avoid the congestive reaction. Prof. Graefe strongly insists upon and carries out this precaution in treating all the congestive and inflammatory diseases of the deeper structures of the eye. Without it, the effect may be, under the stimulus of reaction, an augmentation of the congestion. The use of purgatives will depend upon the state of the intestinal secretions. Likewise, the sitz-bath may be very effectual as a derivative. Cold lotions, i. e., water at temperature of 65° to 75° applied several times a day, have a decided effect upon the congestion, by their cooling influence; still more effectual is the eye-douche, if not too powerful. If

there be exudations in the choroid, corrosive sublimate, in doses of $\frac{1}{10}$ to $\frac{1}{6}$ of a grain daily, becomes highly useful. If the person have suffered from syphilis, or from strumous glandular affections, iodide of potassium will be beneficial. Use of the eyes upon small objects must for the time be prohibited.

If the disease be stationary the cold lotions may be employed, but the person must still use great caution with his eyes. Reading, writing, sewing, etc., are to be reduced to the smallest amount, and the effort to be frequently intermitted. Concave glasses for this purpose are to be avoided, because they diminish the apparent size of the objects, while the patient strives, by bringing the object still closer, to gain a larger image, because he is amblyopic as well as myopic. This conflict of opposing conditions results in the patient's damage by over exertion of his power of accommodation. In regard to seeing distant objects; in walking on the street if, for example, –4 or –5 make objects distinct to the patient, then let him have glasses –6 or –8 to be sure his eyes will not be strained. It is better that the glasses be tinged slightly with cobalt blue, to interrupt the yellow rays which are those most injurious to the eye. Smoked glasses intercept the rays of all colors and are not so well adapted as the blue.

This, then, is the general plan of management. For certain special conditions, such as cataract, something may be said. If far advanced, and the vitreous fluid, nothing can be done. If the opacity be only at the posterior pole of the lens, and the iris not tremulous, extraction may be performed. But if there be reason to suspect detachment of the retina because of the limitation and darkness of any part of the field of vision, no operation is to be done. The operation must be looked upon as done under great disadvantages at the best.

If strabismus exist and the myopia be not excessive, an attempt may be made to cure it, if desired; but perfect success can not always be expected, because if only one eye be affected, the stronger eye performs the act of vision almost to the exclusion of the other.

251 Fourth Avenue, N. Y., Feb. 1, 1860.

ART. IV.—*Dystocia caused by an Incarcerated Ovarian Tumor. With Remarks.* By E. NOEGGERATH, M.D.

ON the sixth of January I was requested by Dr. S., of this city, to examine in consultation with him a case of what he considered to be a retroversion of the pregnant uterus. In the course of my first interview with the doctor, he informed me that the patient in question was in her fifth month of pregnancy, that her womb was entirely retroverted and incarcerated to such an extent that several attempts to restore the same to its normal position had proved an entire failure, and that he intended to bring on premature labor by puncturing the uterus, on account of the impossibility of obtaining admission to the uterine cavity in the usual manner. Well knowing that such an operation was only justifiable in extraordinary cases, I signified my willingness to examine the patient, but without promising to assist in the operation, unless I found it positively necessary. With this understanding we proceeded to No.——, West 19th Street, the residence of the patient. I found Mrs. L., a young woman, evidently suffering much from the effects of severe illness, lying on her left side, and groaning as if she were in labor, with a pulse of about 120, temperature of the skin increased. Upon internal examination, the upper half of the pelvis appeared entirely filled up with a large, immovable, tender tumor, of a soft tissue, very like that of a pregnant uterus. In front of it, and apparently in intimate connection with the same was the vaginal neck, tightly pressing against the symphysis, and so much flattened by pressure that the posterior lip, the softer of the two, overlapped the anterior one on both sides, being extended laterally considerably more than in its longitudinal direction. From this examination I was inclined to conclude that the diagnosis of Dr. S., as to the retroversion of the pregnant uterus, was correct. I then proceeded to the palpation of the abdomen, and to my utmost astonishment I detected another ovoid tumor above the symphysis, which extended upward almost as far as the navel; and, judging from its shape, as well as the nature of its resistance, the natural conclusion was that this was either the whole or greater part of the uterus. All doubts as to the nature of the tumor in question were removed by the presence of movable, small tumors inside of it, sensible to the touch, and which appeared to be surrounded by a liquid menstruum. By auscultation the placental "souffle" was easily detected, but none of the fœtal sounds. From the patient's own account it appeared that she had given birth to a living child a few years ago; that, while enjoying perfect health afterward, her courses ceased about five months since; that her husband

had died two months ago from a feverish disease connected with an affection of the throat (diphtheria?); that about that period, when lifting a heavy burden, she suddenly felt a violent pain in her back, which had continued ever since. These pains so much increased of late, and her general health has so much suffered from it, that she was obliged to apply for medical advice.

Under these circumstances the first idea of a retroversion of the womb was entirely abandoned. The present condition could only be explained: 1. By a tumor proceeding from the uterus itself. 2. By an exudation in the cellular tissue connecting the posterior wall of the uterus with the plicæ Douglasii. 3. By an ovarian tumor which had lodged itself in the pelvic cavity. 4. By an incarceration of part of the pregnant uterus. The first and the last suppositions were dismissed, on account of the very rare occurrence of similar cases. The question as to whether the tumor was the result of a cellulitis periuterina or an ovarian tumor, we left to be settled after another trial at replacement. For this purpose the patient was placed *à la vache*, her body being inclined over the upper part of a lounge in such a manner that, while the lower part of her body remained on the sofa, her head and arms rested on the floor. After she had been placed in that position I introduced part of my right hand into the rectum, and grasping the tumor with four fingers I tried to push it upward, by firm and steady, but gentle, pressure. And in reality, after repeated trials, the tumor began to yield, and I could distinctly feel that the space occupied formerly by the voluminous mass was now quite empty. To ascertain how much had been actually gained by this proceeding, the patient was replaced in her bed and turned upon her back. On examination it could now be ascertained that the vaginal neck was somewhat lower down and more movable, while the tumor obstructing the pelvic entrance appeared to be not so easily accessible to the touch as it was before reduction had been attempted. Still the result of this manipulation was decidedly less than we had expected and desired. But, after all, we satisfied ourselves that it was a movable tumor, and not one connected by adhesions, or one originally in the cellular tissue surrounding the uterus; and I did not hesitate at all in pronouncing its nature to be ovarian, which diagnosis was strengthened by the account of the patient, who recollected quite distinctly that, while in the act of lifting some heavy piece of furniture, she suddenly felt an intense pain in her back. This was no doubt the moment when the tumor was pushed from its original position into the lower pelvis, an incident before observed and mentioned by several authors on this subject.

The question now arose as to what was to be done in order to relieve the patient of her serious ailing. She was complaining of severe pain in her back and abdomen, the latter being very tender to the touch, her pulse was 120, her strength giving way, and labor beginning. If we had succeeded in removing the tumor entirely out of the small pelvis, we might have checked further uterine contractions and incipient pelvic peritonitis. But under these circumstances the only reasonable plan of treatment was the delivery of the uterus of its contents. By thus diminishing its size we hoped to relieve this and the surrounding organs from pressure; and we had even a faint hope that the progress of labor itself would greatly contribute toward restoring the tumor to its former place, an occurrence which had lately been observed by Dr. C. Braun, of Vienna, and published in an article, which we will have occasion to mention hereafter. Such a proceeding was moreover justifiable by the fact that there already existed unmistakable labor-pains, which we could not expect to be able to subdue by any therapeutic means, inasmuch as the irritation of the uterus in consequence of the incarceration of the tumor could not be entirely removed by a replacement of the latter.

The patient was, therefore, placed on her back, and a uterine sound introduced into the uterine cavity to the depth of four inches; and after its handle had been secured tightly to the right thigh by a piece of tape, the woman was made to turn on her left side, and to remain in that position during the progress of labor. This was done at eleven o'clock, A.M., and when we left her she had already experienced a few pains, with increased energy. At seven o'clock, P.M., we saw her again, and found her taken with very satisfactory pains; the vagina was warm, moist, and in a decided state of turgor; the vaginal neck considerably softened, shorter, and lower down. These pains increased during the night, and when Dr. S. saw her on the following morning, at about four o'clock, the os was fully dilated, while the above-mentioned tumor presented only a very small surface to the touch, it having moved a good ways upward, leaving sufficient space for the development of the lower uterine segment. The child and placenta were soon afterward delivered in a vertex presentation by nature, after which occurrence the tumor was again perceived lower down in the pelvis; the patient felt considerably relieved of her former sufferings.

This case is replete with interest, as well with regard to diagnosis as to treatment. The number of similar occurrences recorded in our literature is very restricted. Ovarian tumors, as a cause of dystocia, have been made the subject of a very

important article written by Prof. Litzmann, of Kiel (in the *Deutsche Klinik*. Berlin, Jahrgang, 1852), where he states that up to 1852 only forty-seven cases of this kind had been published. Among this number the diagnosis of ovarian tumor had been established either by a post-mortem, or by puncturing the tumor, in twenty-five cases only. In the other twenty-two instances, the strict proof of their nature as ovarian tumors had been wanting. Of these forty-seven cases, with fifty-six deliveries, thirty-two mothers recovered; twenty-four died; only seven children were born alive; thirty-five had been still-born, and the condition of fifteen had remained dubious; from which it appears that this affection involves a great amount of danger for the life of the child. Ten births were effected by nature alone, seven by replacement, nine by puncture or incision of the tumor, eleven by the forceps, eight by turning on the feet, seventeen by perforation, two by induction of premature labor, three by extraction of the child, while one woman died undelivered.

Another case has been described, in 1857, by Dr. Semmelweiss, of Pesth, where the tumor had been formed by a dropsy of the right ovary. It was mistaken for extra-uterine pregnancy, and the woman delivered accidentally by the introduction of the uterine sound into the cavity of the womb.

In 1856, Dr. Hecker published a case (*s. Monatschrift f. Geburtskunde*, vii., p. 98), where pregnancy was complicated with dropsy of the ovary, and which demanded induction of premature labor in consequence of dispnœa. The patient died in childbed from incarceration of the cyst in the crural canal.

Dr. Spencer Thompson published the history of a delivery, in the *American Monthly* of 1845, where a large fluctuating ovarian tumor was detected behind the vaginal neck, which, however, was pushed upward during the progress of dilatation of the os, so that, finally, a full-grown child was born without any difficulty. In 1848, Dr. F. Elkington reported two cases of ovarian tumors (*British Review*, I., 11), complicating labor. In one of the cases it was possible to effect delivery by turning without changing the position of the tumor; while in the second instance the child had to be taken away by perforation, although the size of the tumor had been considerably lesened by puncture.

In 1859, Dr. Braun, of Vienna, published a number of five cases in the *Wiener Medic. Wochenschrift*, No. 49, etc. All of the women were primiparæ, and had never suffered from any complaints during menstruation or pregnancy. In four cases, the presence of an ovarian tumor was established beyond doubt; in one instance the nature of the tumor had been dubious;

three were simple cysts, and one a carcinoma of the ovary. Labor commenced in four cases at the full term; only in one case it was premature; in all cases incarceration was observed; two children were born alive; three dead; all presented with the vertex, two of which were occipito-posterior presentations. Three of the mothers recovered, two died. The early taxis of the tumor was followed by the happiest results in three cases, inasmuch as two children and three mothers were saved by it. A delay of the replacement was soon followed by peritoneal exudation and the death of the children. In those instances where it was impossible to remove the tumor by manipulation, this object was effected by strong labor-pains, so that the head of the child was pushed downward, while the tumor moved upward into the abdominal cavity. Three times the forceps was applied after the replacement of the incarcerated tumor. In one case the application of the caoutchouc bladder-plug (colpeurynter) prevented a relapse of the incarceration.

Obstacles of the nature just described, when met with during labor, are very apt to puzzle and dishearten the young practitioner who is unacquainted with the resources of art and nature by which such cases are very generally overcome in the happiest manner. In many instances, nothing short of Cæsarean section seems to be required at first sight, when a thorough knowledge of the nature of the disease would easily allay our fearful apprehensions. The rules which we have to follow in similar instances are: 1. To make out a clear diagnosis of the obstruction. 2. To place the woman on her knees and elbows, and try to effect a replacement of the tumor into the upper pelvis by passing three or four fingers into the rectum. 3. If this should fail, to wait and see what strong labor-pains will do. 4. If the latter should fail to effect a replacement—a fact which generally takes place—to renew the attempt at replacement, and apply such medicinal and local remedies as are supposed to increase the force of the pains, while the patient is to be kept as much as possible in a prostrate position. The strict adherence to these rules will seldom fail to bring about the desired dislocation of the tumor, and a safe delivery for both mother and child.

50 Amity Street, New York.

ART. V.—*Spasmodic Stricture of the Urethra, with conclusions in regard to Strictures of the Urethra;* being extracts from an Inaugural Thesis. By G. W. McCUNE, M.D., of New York.

THE classification that I shall follow, and the one which I am inclined to feel is most correct, differs somewhat from other classifications in having but two divisions, and each of these is subject to various modifications. Contractions of the urethra, Mr. Henry Thompson says, "possess a natural tendency either to be permanent or to be transitory as regards their character and duration." A "permanent contraction" is the result of an organic deposit in and around the part where the contraction will be found to have taken place, and from the fact of there being a permanent lesion is termed "permanent" or "organic stricture."

A "transitory contraction" is the result of some "local vascular inflammation or congestion causing temporary narrowing of the canal, hence inflammatory or congestive stricture." Excessive contraction from any irritation, either local or general, of the voluntary or involuntary muscular fibres that are immediately connected with the part may produce a phenomenon that is designated "spasmodic stricture." A "pure" example of stricture uncomplicated with either variety might be said to never exist, and it is only by tracing out the more prominent features that a classification is made. When we have a narrowing of the urethral canal from an organic lesion, an inflammatory or spasmodic element will almost invariably be found to exist at the same time; but, the organic element predominating, it is with comparative ease we designate the class to which it properly belongs.

The same is true of inflammatory stricture; the diseased action by its local irritation causing spasm of the muscles, spasmodic stricture occurring as a sequence. Hence organic and inflammatory, inflammatory and spasmodic, or organic and spasmodic strictures may and do exist together in a great majority of instances. Mr. Hunter says, "there are very few strictures that are not more or less attended with spasm." The question now arises, "does pure spasmodic stricture" of the urethra, uncomplicated with any change, either inflammatory or organic, ever occur? To this most important question may be found recorded the testimony of some of our best and ablest surgeons in its favor. Sir Benjamin Brodie says, "Instances are not wanting of persons who have been for a considerable time liable to occasional attacks of retention of urine from spasmodic stricture of the urethra, although in the intermediate periods there was no perceptible diminution of the stream of

urine, and hence we are justified in the conclusion that a spasmodic stricture may exist independent of any actual organic disease; at the same time it must be acknowledged that the existence of a purely spasmodic stricture is of rare occurrence." Mr. Guthrie has met but one case, and both refer the contraction to the "compressores urethræ" muscles. Mr. Phillips says, "occasionally, in the operation of catheterism in irritable subjects, we find the sound is apparently grasped and held with force by the parieties of the canal, so as almost to prevent the advance or retreat of the instrument." Mr. Hancock "believes, in opposition to what has been advanced by Sir B. Brodie, that a spasmodic contraction of these organic fibres may take place in the anterior part of the canal, even within an inch of the orifice, and also that it may exist as a primary and independent affection, without a spasmodic affection necessarily existing at the same time in the membranous portion."

Mr. Smith says, "a pure spasmodic stricture is not to be denied, but in a majority of instances of so-called spasmodic stricture there exists at the same time an organic narrowing of the canal, and the spasmodic contraction is an additional element, the result of some accidental irritation, local or general." Dr. Jas. R. Wood is of the opinion that spasmodic stricture does exist. After examining the authorities upon this subject, I am led to the belief that the so-called "pure spasmodic stricture," uncomplicated by any organic or vascular change in the mucous membrane of the urethra, is of a more rare occurrence than is generally supposed by surgeons.

My reasons for entertaining this belief I will proceed to detail in as brief and summary a manner as possible. The two varieties, "inflammatory or congestive," and "spasmodic stricture," have been greatly confounded; and, in fact, the terms have been used as synonymous by many, while the truth is, the greatest possible difference exists between the two: the congestive variety affecting the mucous membrane of the urethra and surrounding parts, while the spasmodic variety, as such, only acts upon the muscular fibres surrounding the urethra, and those muscles in immediate contact with that membrane. I must insist upon the importance of adhering to this division of our subject, for we shall see as we get farther on that nearly all spasmodic strictures are described as having an additional element, either organic or inflammatory.

This looks too much like begging the question. Let us adhere to the words of our text, and, if we find "pure" uncomplicated spasmodic stricture, let it go as such; and on the other hand, if we do not, we are so much the wiser for knowing it. It is certainly true that the sensibility of the part is greatly increased

by the presence of an inflammation, even if there is no solution of continuity existing.

The urethra, in consequence of its increased susceptibility to impressions from the presence of an existing inflammation, is liable to sudden changes from the irritation of substances which, during health, produced no change whatever upon its mucous membrane. The urine, for example, in its "natural condition, or more readily if it has become excessively acid or alkaline," will by its presence produce occlusion of the canal, and that, too, sometimes to an alarming extent.

This very condition has been described under the head of "spasmodic stricture," while the real element in the disease appears to be inflammation or congestion. It certainly is true that spasm may be present as a complication, so may it occur as a complication in almost every conceivable variety of stricture. When it thus occurs, I do not choose to admit it into the classification I have adopted. The great argument in favor of this variety being classified as spasmodic stricture is its readily yielding to the means used to overcome *spasm*, viz., an opiate enema or suppository, warm bath, hot fomentations, twelve leeches to the perineum, an ounce of castor-oil with twenty or thirty drops of laudanum in it; admirable remedies, when the symptoms usually subside, and the patient readily passes his water.

Unfortunately for the advocate of this theory, the same remedies are used in the purely inflammatory form with apparently as much, if not greater, success; and, besides this, the remedies that are employed are the most rational that could be suggested. I will give the main features of a case of inflammatory and spasmodic stricture coexisting as reported by Mr. Henry Thompson.

A young man has suffered from an acute attack of gonorrhœa, which is disappearing; the painful symptoms have subsided, and only a little discharge and some pain on erection remain. He has been "*keeping quiet*" for three or four weeks, has rigidly followed the advice of his medical attendant, has avoided stimulants of every kind. At the end of this time, he has accepted an invitation to make one at a dinner-party, and with the increased zest that follows prolonged abstinence, and the happy consciousness of fast-approaching convalescence, he partakes freely of the good cheer before him; and in the excitement produced by it and the society around, all thoughts of restraint vanish, and liquors in variety, and condiments of all kinds are freely indulged in. Some time after, and not until hard pressed, he finds an opportunity to empty his bladder, which has been filling fast meantime, under the diuretic influence of claret,

champagne, etc., etc. It is now discovered to him, and that most unexpectedly, that he is without power to relieve himself; repeated efforts are made, and a few drops pass; but each attempt only convinces him that retention has taken place. I will not follow the case any further. Now, what does all this prove? It only goes to show that, after an acute inflammation of the urethra, and before complete resolution has taken place, we may, by intemperance, or by violence applied to the part, or by cold, or, in short, any thing that will determine to the mucous membrane of the urethra, produce by *effusion and its attendant swelling* occlusion of the canal, and retention of urine to a greater or less extent.

The time necessary to produce such a congestion has been ample, since we find congestions in other parts of the body produced in a very brief space of time, and we are bound to infer that the same phenomenon may occur in the urethra. A foreign substance comes in contact with the mucous membrane of the eye, congestion and inflammation almost immediately take place, and this goes on until the offending substance is removed, when the parts generally return to their normal condition.

The same phenomenon is made manifest in common catarrh. The patient is riding after night; he gets his feet wet; or, if he is still more susceptible to the influence of cold, he sits where a slight draft of air is poured upon him, when in a few moments he discovers he has taken cold in the head. What is the condition of the parts here? The congested mucous membrane is at first dry, its secretion is suspended; nor is this the only change that takes place in it, it becomes tumid, also swollen, thicker than before, it is redder than natural.

At first, though the nostril is dry, he can not breath through it, it is stuffed up—not with accumulated mucus—but by the mere swelling of the membrane. Now, there is no spasmodic element existing here, but the closing up of the passage is produced simply and solely by congestion of the part.

Spasmodic contraction of the larynx, as such, undoubtedly exists, and as a proof of this we have only to bring in contact with its lining membrane any strong or irritating vapors, as ammonia or carbonic acid; or still more readily by attempting to pass any foreign substance into the trachea. We have spasmodic stricture of the intestines, and of the rectum, uncomplicated by any lesion whatsoever.

Again I quote from Mr. Phillips: "Although I believe the seat of spasmodic stricture to be in that portion of the canal so nearly, and in some cases so entirely surrounded by the acceleratores urinæ and Willson's muscles, yet, in highly irritable urethras, it is not unfrequently found that the engorgement of the

mucous membrane is so considerable as to arrest the instrument two, three, or four inches from the orifice, and to simulate the character of true stricture."

The same difficulty grows out of this case that has grown out of every case of "pure" spasmodic stricture that I have been able to examine from the report of the case as given by the surgeon. Mr. Phillips says, "the engorgement of the mucous membrane of the urethra is so considerable." A beautiful case of congestive stricture, transitory in its duration, and the congestion in such cases is the paramount cause of the stricture, and not *spasm*, although spasm may exist as a sequel of the congestion.

Mr. Thompson's case of a policeman who was the subject of slight organic stricture, and habitually went on duty in the morning suffering much from cold, observed that his stream of water diminished in size during one of these attacks, only proves that spasms may occur as a sequence of organic stricture, and that the spasmodic element was the ultimate cause, the proximate cause being the organic stricture itself.

The great diversity of opinion in regard to this subject probably arises from the failure of surgeons to recognize exactly each man's views when speaking of spasmodic stricture. A spasm that is the result of an organic lesion is as purely spasmodic, so far as "*spasm*" is concerned, as though it had occurred uncomplicated with any lesion, the word spasm having been used to designate the class. The difference then between a "purely" spasmodic, and a spasmodic stricture, is not that one is any more spasmodic than the other; but that the one occurs without any complication, while the other always occurs as a consequence of some other affection.

Summary of conclusions in regard to Strictures of the Urethra.

1. That "pure spasmodic stricture" does occur; but, in a vast majority of instances of so-called "pure" spasmodic stricture, there exists at the same time an "inflammatory" or "organic" element; the spasm existing as a secondary, and not as a primary condition.

2. That "inflammatory or organic" stricture is almost always the disease in question when *spasm* of the muscles is supposed to be the lesion.

3. That in "organic stricture," dilatation, carefully and perseveringly applied, is by far the most safe and ready means of cure that can be employed.

4. That, while dilatation is applicable in a vast majority of cases, there are some that are not amenable to that mode of treatment.

5. That nitrate of silver, properly applied, is sometimes useful in the last-named cases, in allaying the irritation, thereby allowing the more free use of the bougie in dilatation.

6. That caustic potassa is more severe than nitrate of silver, destroying the tissues it comes in contact with; consequently should be used with great caution, and that in no case should it be used to produce sloughing.

7. That internal division of the stricture may be performed with good results, if the contraction is in the anterior portion of the canal; and division of the stricture from behind forward is the most favorable operation. If the seat of the stricture is posterior to the bulb, internal division is contraindicated.

8. That subcutaneous incision is admissible under no circumstances, the dangers from extravasation being too great.

9. That in strictures of extreme contraction—that are irritable, and possess strong contractile properties—external division upon the grooved director is indicated.

10. That in acute retention, if the stricture is "impermeable," the perineal section may be performed; the stricture divided afterward.

11. That in the treatment by external incisions, a catheter should be introduced into the bladder through the perineal wound, and the urine be allowed to drain off through it in preference to the old way, as directed by Mr. Syme.

12. That since the operation for external division has proved fatal in a little over six per cent., the patients should be selected with extreme care, and the operation performed with the greatest deliberation.

ORIGINAL LECTURES.

LECTURES ON THE ACCIDENTS

WHICH MAY OCCUR

SUBSEQUENT TO PARTURITION.

Delivered in the University Medical College, New York

BY T. GAILLARD THOMAS, M.D.,

PHYSICIAN TO BELLEVUE HOSPITAL.

LECTURE II.

Post-Partum Hemorrhage; its Treatment.

GENTLEMEN,—On a subject so trite, so thoroughly investigated, and so ably and fully treated of by many of the most capable teachers of our art, you will anticipate nothing that is either novel or original. The most complete treatises on it every where abound, and it affords pride to the obstetrician of the present day to review the means at his command for controlling an accident of so grave and portentous a nature; means which are the offspring of increased knowledge of the pathology of the complication, and which are being daily indorsed by the happy fruits of experience. And yet I must own to a hope that the hour which you are about to accord me may prove remunerative, and to a belief that it will do so, if I succeed in guiding you to the more practical parts of the subject over a bridge composed of the pathological conditions giving rise to the grave symptom which is likely to usurp your whole attention, and in persuading you to grasp broad principles in combating them, instead of memorizing individual and isolated precepts or prescriptions.

In the very beginning let me exhort you to accustom yourselves, when by the bedside of the bleeding woman, to look into the uterine cavity, as if its walls were transparent, and see the origin of the evil, the source of the *symptom* which is before you; let me beg that you will fix the *indications of treatment* in your minds; and believe in the assurance that if you do so, the various means for accomplishing them will suggest themselves by as natural a sequence as that which would govern the plainest deduction of logic.

Study the treatment of hemorrhage as you would that of any disease, as, for instance, pleuritis; first, acquaint yourselves with the pathological state which gives rise to the symptoms, which, being grouped, constitute the tableau of the disease; second, learn by close observation Nature's method of removing such morbid condition unaided, which involves the most useful of all studies, that of the natural history of disease; third, determine

upon the indications which should be fulfilled by you for the purpose of aiding or replacing the efforts of nature; and, lastly, acquire a knowledge of the best means for attaining these ends offered you in the resources of art.

He who memorizes merely the medicines advised for the treatment of pleuritis, without understanding in what the disease consists is an empiric, and he who is satisfied to treat post-partum hemorrhage with no more profound knowledge is no less so. But not merely is it necessary for you to have such knowledge, it is incumbent upon you in the hour of action to keep it, like a beacon light, constantly before your eyes to inspire and guide your interference, and to make bold and energetic your efforts at relief.

Concerning the causes, frequency, and prognosis of post-partum hemorrhage, enough was said at our last meeting, so, passing by these topics, we will at once proceed to the enumeration of its

VARIETIES.

When the blood which escapes from the vessels of the woman pours freely away from the vagina, the hemorrhage is technically termed external, or open. When, however, some obstruction dams up the canal, and prevents the escape of the blood, it is "backed" into the uterus, which it may greatly distend, and the flow is then styled internal, or concealed.

Again: the flooding may occur soon after delivery (the rule being within an hour), when it is termed immediate, or it may take place later, at any time within a month, when it receives the name of remote hemorrhage. To sum up and present them at a glance the varieties are

(*a*) *Internal.*
(*b*) *External.*
(*c*) *Immediate.*
(*d*) *Remote.**

Do not trouble yourselves with these technicalities, but recollect them rather as simply descriptive of certain variations in the nature of the discharge, as to time of occurrence, and the freedom of escape of the blood. These two facts, however, be sure you engrave upon your memories with zealous care: first, that a copious flow of blood may take place, and be so dammed up in utero as to extinguish life without the escape of a drop to tell the fearful secret of the death; and, second, that the lives of parturient women have been lost by this accident one, two, and even three weeks after delivery.

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* On the subject of remote hemorrhage I would refer those interested to a very able essay by Dr. Alfred H. McClintock, the accomplished Master of the Dublin Lying-in Asylum, and to an equally valuable one by Dr. Thomas F. Cock, of this city.

SYMPTOMS.

In a case of external hemorrhage rational symptoms are not needed for a diagnosis, for the physical one of the bloody stream which, gurgling from the maternal passage, pours over the bed, deluges the thighs of the woman, and causes her to cry for help, is in itself enough. In internal hemorrhage, however, our attention must be aroused by the constitutional signs of rapidly occurring anæmia, or we may find, too late, that death, like a thief in the night, has come and stolen from us our patient's life.

When one is being bled from the arm, the first signs which show the watchful surgeon that the loss of blood is affecting the vital powers are these: a deathly pallor, which shows itself first on the lips and cheeks, spreads over the face; then deep sighs are heaved, fresh air is demanded, the patient declares that she is becoming faint, a clammy sweat breaks out over the face, and syncope, more or less profound, checks the flow of blood and closes the scene. So soon as the flagging heart resumes its duty the crimson jet again takes place, and after it has continued for a certain time the pallor of the face becomes more marked and deathlike, the muscles twitch, the patient pants for air, a sinking, sometimes even a gnawing sensation is experienced over the epigastrium, the pulse becomes rapid, small, creeping, and wavy, a more copious sweat breaks out, when syncope again checks the ebbing tide, and thus closes scene the second.

These are the rational signs of post-partum hemorrhage. I have given them as occurring from an ordinary venæ-section advisedly, because I desire you to know that the symptoms which mark it mark all profuse hemorrhages, and are in no wise peculiar to any *one*. The only difference between anæmia from venæsection and that from post-partum hemorrhage is, that in the latter the flow is so profuse and rapid that the symptoms are necessarily more urgent and less capable of analysis. A hemorrhage of equal rapidity and magnitude into the stomach, bladder, or intestines would give you just the same symptoms; they are diagnostic of hemorrhage, do not believe them so especially of *post-partum hemorrhage.*

But suppose that the loss subsequent to delivery goes on still further than represented above as a result of venæ-section, what in addition will mark the closing scenes of the terrible tragedy? The patient soon tosses wildly around in bed, hysterical symptoms show themselves, she begs for air, declares in a husky, feeble voice that she is dying, and is taken with violent and constant retching or hiccough.

Soon after, she may lie quietly, exhausted, almost exsanguine, upon her back,

> "With just enough of life to show
> That life will soon be gone,"

and convulsions occur, which end the struggle; or, these being absent, syncope, which has been at intervals visiting the scene like a ghost, now advancing, now retreating, beckoning the ebbing soul to eternity, with her treacherous, guileful soothing, quiets the sufferer's anguish, then gently leaves her in the arms of death.

But these, which are the rational signs may at their very inception be substantiated by the important physical one elicited by placing the hand upon the abdomen and feeling the uterus, it will be found distended, as large perhaps as before delivery; and as firm pressure is made upon it, a gurgling sound of painful significance, accompanied by a vaginal discharge, will shock our ears. Or, in women of great obesity, the whole abdomen will yield simply the sensation, coarsely, yet appositely styled "boggy," and we will be led to our conclusion by absence of the small, round, hard, tumor, which should exist, rather than by the large one which really does.

SOURCES OF HEMORRHAGE OCCURRING POST-PARTUM.

There are three main sources from which the blood may come:

(*a*) *From ruptured vessels of vulva.*
(*b*) " " " " *os and cervix.*
(*c*) " " " " *uterus and placenta.*

(*a*) There is at the root of each labium a plexus of very large veins, which extend some distance along the vagina, and which have been described under the name of the bulbs of the vestibule. During pregnancy the return from these veins is obstructed; they become varicose, and sometimes, on rupture, give forth a fatal hemorrhage. During labor, as the child's advancing head presses upon these canals, they sometimes allow of a dropsical oozing, constituting œdema labiorum; of rupture, without corresponding solution of continuity in the external tissues, giving rise to a bloody tumor called thrombus;* or with such solution to hemorrhage as in the case which I now relate: A short time ago, Dr. Geo. N. Richardson, of Staten Island, having completed the delivery of a lady, discovered that flooding was taking place; he immediately forced the uterus to firm contraction, applied cold to its fundus and to the vulva, and soon deemed the flow controlled. He then left her, the uterine tumor being so hard and firm as to preclude all fear of a relapse. Very soon, however, he was recalled, and found the patient blanched from loss of blood, which had trickled through the mattress to the floor. An exploration showed that the flow was still continuing, and at the same time he was surprised to discover the almost paradoxical fact, that the uterus was small, hard, and firmly contracted. He then instituted an ocular examination, discovered that the discharge came from the root of one labium which was slightly ruptured, and by ordi-

* This bloody tumor is generally due to rupture of a branch of the ischiatic or pudic artery.

nary surgical means at once controlled it. As my intention is merely to signalize this source of flooding after delivery, and not to enter at all into its consideration, I would refer those who would learn further concerning it to Meig's *Treatise on Obstetrics*, p. 104, ed. 1856, Simpson's *Obstetrical Works*, vol. 1, p. 277, where seven cases terminating fatally are recorded, and *Colombat Dis Fem.*, Am. ed., pp. 84 and 85.

(*b*) The blood-vessels of the cervix uteri attain considerable size during pregnancy; so large do they become, indeed, that serious results may follow their rupture, which may be the consequence of introduction of the hand into the uterus in turning, the introduction of forceps into cervical canal, or the use of the hysterotomy in slitting it for unconquerable rigidity. Professor Simpson has described a varicose state of the vessels of the cervix which would greatly predispose to such an accident, and Dr. Montgomery has expressed the belief that thrombus occurs here as well as in the vulva which would have a like result.

But a far more frequent cause of hemorrhage from this source is the attachment of the placenta over the walls of the cervical passage and over the os, a cause so frequent, as to have led Dr. Hamilton, of Edinburgh, to say that he had learned to "dread this danger in every case where he has been obliged to force delivery in consequence of uterine hemorrhage."—Simpson's *Obstetrical Works*, vol. 1, p. 637.

You will often be struck, in making a vaginal examination after delivery, by the peculiarly lax and inert condition of the os and cervix uteri, while the body and fundus are fully contracted; now, if the ruptured utero-placental vessels happen to be in a zone so low in the cervix as not to be compressed by the action of the body, a flow is liable to occur, which will prove very rebellious to the ordinary plans of treatment adopted in the more common cases of hemorrhage from the uterine cavity. This fact is clearly enunciated by Dr. Dewees in the following sentence: "The body and fundus may be firmly contracted, while the neck may be flaccid; this may occasion flooding if the placenta has been attached in that vicinity."—Dewees *on Midwifery*, p. 355. But to this variety, which, like the first, is one of those exceptional ones which may occur with and in spite of a contracted uterus, it is my intention merely to call your attention in passing to the chief, most common, and therefore most important variety that forms the third source. I can not leave the second form, however, without pointing to the evident fact that local applications (as a lump of alum, or a sponge saturated with a solution of the perchlorid of iron, placed against or within the cervix) would be the most rational and efficient means of controlling the flow, while a blind and routine resort to the means directed to causing contraction of the uterus would be little better than empiricism.

To render our subject complete, I have deemed it my duty to lay before you all the sources from which post-partum hemorrhage

may arise, leaving unmentioned only some unimportant and uncommon ones, as rupture of the vagina, or of hemorrhoidal tumors. If I have led you into the belief that these sources are equally common, I have done you serious injury, by confusing in your minds what should be most clearly and distinctly comprehended, namely, that post-partum hemorrhage *almost always* arises from rupture of the utero-placental vessels. When, then, you stand face to face with such a case, do not imagine that time is to be consumed in making a differential diagnosis as to the source of the blood; but *always*, unless otherwise informed by some peculiarity in the case, take it for granted that the utero-placental vessels give it forth, and act in accordance with this view. Should you fail in controlling the discharge by accomplishing uterine contraction, as did Dr. Richardson in the case referred to, proceed to determine as to the correctness of the diagnosis which was hurriedly demanded by the exigencies of the case, and accordingly hurriedly made; *then*, perhaps, you will find that the suggestions just made may prove of value, by guiding your thoughts and investigations into a channel where truth might have remained hidden from you without the knowledge they have conveyed.

(*c*) We now arrive at the third source of hemorrhage post-partum, the subject of our chief consideration to-day. Having practiced rather a long and (I fear) tedious "surround," our game is now fairly before us, separated from all that could distract and complicate our efforts at mastering it.

In every subject there is some salient point which acts as key to the whole; possess yourselves of it and the victory is yours; get only an indistinct idea of it and you can not proceed without uncertainty, difficulty, and danger of error. In the present case, for example, such a key is presented in the anatomy of the placenta, and the method of its expulsion after labor; and without such knowledge your efforts at comprehending the whole subject will prove vain and profitless. Bear with me patiently, then, as I take a rapid sketch of the development of the impregnated ovum, from the time of its entrance into the uterus up to its firm attachment to that organ, which occurs between the third and fourth months.

ANATOMY OF THE PLACENTA.

The embryo, surrounded by its membranes, passes down the fallopian tubes and enters the body of the uterus early in the first month, the precise period of its entrance being unknown, and, in the present connection, unimportant.

The mucous membrane of the uterus, which is congested, hypertrophied, and thrown into folds, in answer to the stimulus of pregnancy, receives it, and at once throws around it an envelope, consisting of an outgrowth of its own structure, which receives the name of the decidua reflexa.

The chorion, which from an earlier period even had a somewhat shaggy appearance, now gives off villi, which grow from it on all sides, as hair from the head, like which also they are the result of cell growth.

These villi pass into the little cavities formed by the reduplications of the mucous membrane, or, as some suppose, into the uterine follicles, and being thus brought into immediate contact with the blood of the mother, serve, by means of endosmosis and exosmosis, not only as channels, through which the embryo is nourished, but also as a means for the elimination of excreta, which are given up to the maternal blood to be finally gotten rid of.

This answers very well for a short time; very soon, however, so early even as during the first month, as the embryo develops, needs more nourishment, and casts off more effete matter for excretion, some more perfect and efficient arrangement becomes necessary. The allantois, a saccular prolongation from the fœtal body, then projects itself from the pelvic region of the embryonic body, and guiding blood-vessels all over the villous chorion, renders it highly vascular. These vessels, breaking up into numerous terminal branches, soon penetrate into the villi, which were previously occupied only by cells, and now the blood of the child being separated from the blood of the mother only by thin membranes, exhalation and absorption can readily go on.

About the third month even this connection is not sufficient; a more complete one is again demanded by the increasing wants of the child, and the demand is met by the formation of the placenta, which takes place in this wise: All those villi of the chorion which are in connection with the decidua reflexa atrophy, and the surface of the chorion becomes bald over all its extent, except that which is in contact with the decidua serotina. There, so far from undergoing atrophy or diminution, the villi, and the vessels which they contain, enlarge greatly, each villus admitting of a capillary, which turns upon itself at the end of the canal, and gives a channel by which blood which came from the fœtal body may return to it. The blood of the fœtus takes this course for purposes of æration and absorption, and, of course, a large supply of maternal blood must be brought into contact with it for furnishing the requisites for these. The maternal vessels (that is the vessels of the decidua serotina) in contact with the tufts, just described, now enlarge immensely, become varicose, as it were, and soon a number of little lakes or pouches of blood are formed around the fœtal capillaries. These lakes are supplied by the uterine arteries, and after the blood has circulated through them it returns to the mother's system by the uterine veins.

Understand that these lakes are not formed in the uterine wall, but upon it, and from the extremely dilated vessels of the decidua serotina. They constitute the maternal portion of the placenta; the tufts, or vascular villi, the fœtal portion.

Suppose, now, that you examine a section of the placenta, laid

flat upon the table, how will it be formed? Its upper boundary, or roof, will be the chorion; its lower, or base, the remains of what was the decidua serotina, and between these will be found the placental structure. Entering the organ at its roof will be found the fœtal vessels, and at its base the uterine. As soon as the fœtal vessels have entered it they split up into thousands of capillary terminations, which are called tufts, and which extend into the placenta, as the rootlets of a plant do into the earth. As soon as the maternal vessels have entered it they dilate, become aneurismal, as it were, form pouches which extend up alongside of the tufts to the very roof of the organ, and from which the blood is returned by the uterine veins to the system of the mother. The lakes or pouches of blood above described communicate with each other, some suppose, so freely as to constitute, for all practical purposes, one cavity; but there are some reasons for believing that the communication is only partial, so that a number of them might be emptied without affecting the contents of adjacent sacs.

MODE OF EXPULSION OF THE SECUNDINES.

In the lower order of animals the fœtal connection is not near so intimate as in man, and a separation of the fœtal and maternal portions of the placenta readily occurs. Thus in the sow the vascular chorion of the pig is merely laid upon the vascular membrane of the uterus; in the cow the fœtal tufts dip into the cup-like cavities of the uterine mucous membrane, but are with great readiness drawn out; hence, as a result of parturition, these animals do not have hemorrhage. In the human female, however, the union is too firm for any separation of fœtal and maternal parts; the uterine effort which casts off the placenta, peels off the entire organ, tufts, maternal pouches, and the mucous membrane of the uterus, which was at an early period styled "serotina." All are swept from the uterine wall and cast forth from the vulva; the uterine arteries and veins, which a moment before communicated with the now dislodged mass, being left with their open mouths gaping upon the surface of that organ.

Let me endeavor by a coarse illustration to *secure* an understanding of this part of our subject; my strong desire to have you comprehend it must excuse its uncouthness to you; the fact that many of you are "first-course students" must do so to physicians who may be present. Suppose, a number of aquatic plants growing on the surface of a tank placed on the roof of this house, and supplied with water by a tube, running from below upward, the roots of those plants which dip in search of nutriment into every part of the water represent (need, I say, roughly?) the fœtal tufts; the water surrounding the roots represents the blood in the placental lakes (which consist of hugely distended vessels), and the tube which runs upward represents a uterine artery. Now,

as this tank is not *in* but *on* the walls of this house, so are the placental lakes *on* and not *in* the uterine walls. And to use the simile a little further: in the cow the fœtal tufts are pulled out of the placental lakes, as the roots of the plants would be if they were lifted out of the water, and hence there is no hemorrhage; in the human female, however, the maternal lakes with the tufts in situ are swept away as if the tank, together with all its contents, were cast from its position. Now, the tank being cast away, the mouth of the tube which supplied it is left open on the roof, and the water which it conducts will escape, so are the uterine arteries and veins left open on the surface from which the placenta has been torn, and unless closed by some means their precious contents will likewise be lost.

When the placenta is detached the maternal pouches empty themselves at once, hence, the flow of blood which always accompanies its expulsion, and which so often frightens the novice into the belief that hemorrhage is commencing.

This view of the anatomy of the placenta is a contested one, and at the same time that I do not deem it best to burden your minds with the various doctrines which have been and are maintained upon the point, I am unwilling to have you accept the conclusion which I, from my investigations have adopted, without reflection and research. The point at issue is the existence of the maternal lakes or pouches. Should you wish to satisfy yourselves about them, place a placenta under water, search upon its uterine surface until you find a small oblique opening (which will be nothing less than the mouth of a materno-placental vessel, before separation, continuous with one of the uterine) and into it insert the end of a blowpipe. Then practice gentle insufflation, and you will soon see the placenta puff up; the air will penetrate to its very roof; the organ will rise in the water, become rotund, and continue to swell until a bubbling noise at some, perhaps distant, point will draw your attention to the fact that the air is escaping from the mouth of a blood-vessel in that locality. This will convince you, at least, of the very free communication which exists between the maternal vessels of the organ, and you may by another experiment, instituted and reported to the profession by Prof. J. C. Dalton, of this city, convince yourselves that this freedom of passage is due to the existence of the pouches above described. Having lost a patient very suddenly in the ninth month of pregnancy, I was kindly assisted by Dr. Dalton in the performance of the experiment which I now relate to you, at the post-mortem examination. The uterus having been opened so as to leave the placenta entirely adherent, and the fœtus removed, a blowpipe was inserted into one of the sinuses on the cut surface of that organ (the uterus), and gentle insufflation practiced. The venous sinuses were soon inflated, then the deeper portions of the placenta, and the air then passed between the tufts to its very roof, and became visible just under the transparent chorion.

A small portion of the placenta was then separated at its periphery opposite the point on the uterus where the pipe was inserted, and, insufflation being again practiced, air traversed the organ as before and escaped in bubbles at this distant point.

I have on several other occasions seen this experiment tested, and my conviction is that, if it be carefully performed by one whose search is after truth, and not after the substantiation of previously conceived views, it will be found hard to resist the conclusion which I have offered you in this lecture as a fact. In fact, the evidence afforded by this demonstration, which the profession owes to Dr. Dalton, is overwhelming, and nothing but that most invincible of all barriers, prejudice, will, I think, be found able to withstand it. At any rate, if you have been otherwise taught, suspend your judgments in the matter until you have had an opportunity to test it for yourselves after the manner described.

PATHOLOGY OF POST-PARTUM HEMORRHAGE.

Reflecting upon the structure of the placenta, you will at once perceive that blood could escape from the utero-placental vessels in two ways: first, the placenta being partially detached, blood may flow into it at its attached extremity and out at the detached; second, the entire placenta being detached, the vessels opening on the surface of the uterus may remain unclosed, and thus pour out their contents.

In looking, then, through the uterine walls of the bleeding woman with the eyes of knowledge, you will always see one of two pathological states producing the dangerous symptoms which jeopardizes her life: either the placenta partially detached and bleeding at its disrupted portion; or the placenta entirely detached, and the gaping vessels of the uterine wall pouring forth the bloody torrent.

These, and these only, are the conditions which can give rise to the symptom which alarms you: for, if the placenta is every where attached, no broken vessels will exist for the flow to occur from; and if entirely detached, and the uterus contracted, the open mouths which could give it forth are necessarily closed and impermeable.

CAUSES OF POST-PARTUM HEMORRHAGE.

Although this part of our subject was fully discussed at our last meeting, I deem it best to repeat here, for the purpose of having the etiology of the accident clearly before you while studying its treatment, the chief of the conditions conducive to the result. You remember that it was said that any thing which induces an inert or sluggish state of the uterus, or any thing which defeats its efforts at contraction, would constitute an efficient cause for the flow from the open mouths of the uterine vessels, and that seven

special causes were enumerated. Now all these may in the present connection be profitably arranged under two heads:

1. Patency of the uterine vessels from want of contractility in its fibres, whether due to
   - Inertia uteri;
   - Uterine exhaustion;
   - Sudden evacuation of contents;
   - Mental emotion; or,
   - Excited circulation.

2. Patency of uterine vessels from some mechanical interference with and prevention of contraction of that organ, whether due to
   - Adherent placenta;
   - Distention by clotted or fluid blood; or,
   - Distention by a second child.

These, gentlemen, are the morbid conditions with which we have to deal either separately or conjointly in every case, and should you keep them clearly outlined before your minds at the bedside, the indications of treatment will be neither obscure nor empirical.

But before proceeding to investigate these indications, it will be necessary for you to know how they give rise to death; and how nature, without your assistance, would proceed to, and sometimes succeed in removing the patient from danger.

CAUSE OF DEATH IN POST-PARTUM HEMORRHAGE.

The remote cause of the fatal issue is evidently the rapid abstraction of blood from the system, which, depriving the brain of its requisite supply, produces syncope. This state, in its turn abolishing for too long a period the functions of the various organs of life, the heart among the number, proves by such abolition the immediate cause of death.

METHOD BY WHICH NATURE PREVENTS OR CHECKS HEMORRHAGE.

When the surgeon desires to check the flow from an external bleeding vessel he applies around it a fine ligature, which instantly renders it impervious. In doing so, he only clumsily imitates what nature does in every case of parturition, he is only checking the discharge as she does whenever interfering successfully in post-partum flooding. The uterine vessels are surrounded, as mentioned in our last lecture, by arching and surrounding loops of strong muscular fibres, which, contracting, compress them as your finger would be compressed by the elastic meshes of a purse through the wall of which it was inserted. But not only are they thus ligated; the mouth of each uterine vein which establishes communication between the venous canals, arranged in planes one above the other, extending from the mucous surface to the peritoneal, is partially closed by a semilunar projection formed by the

lining membrane of the vessel and of the contractile fibres of the uterus. These valve-like projections before delivery allow of a free flow of blood from those planes near the mucous surface to those near the peritoneal; and it is probable, at least, that after the separation of the placenta the contraction of the fibres which they contain causes a complete closure of the canals, and thus prevents a regurgitant action which would constitute hemorrhage. (A description of these sphincter-like fibres has been given by Profs. John Reid and Goodsir.)

Thus, by exerting her admirable and inherent powers, it is that nature often proves herself competent, unaided, to remove the first of the morbid conditions which have been mentioned.

Should the second exist, the uterus will often, by one powerful throe, expel from its cavity the resisting and interfering mass which has prevented the exercise of its powers for closing the mouths of the bleeding vessels. But should nature, in either case, prove incompetent to her task, then is it the proud privilege of art to come to her aid, and give her the assistance for which, in the eloquent language of symptoms, she loudly clamors.

You will now, I trust, be able to appreciate one of the most important points of our subject, the

INDICATIONS WHICH SHOULD BE FULFILLED IN POST-PARTUM HEMORRHAGE.

They are these:

(*a*) *Prevent death by syncope or exhaustion.*
(*b*) *Remove aught preventing uterine contraction.*
(*c*) *Force the uterine fibres to contract.*

Do not suppose that, at the bedside, you are advised by me to analyze your actions as I am doing here; the analysis should be made beforehand, in your hours of study, and your course in time of need will be most favorably impressed by it. In time of peace the soldier is taught to bear his arms, each movement being analyzed, and each part of a movement explained; upon the field of action he will go through his tactics without hesitation, almost without thought, and even were he desirous of ridding himself of his previously acquired training, it would distinguish him from the raw and undrilled militia-man in spite of himself.

But I am particularly solicitous for you to approach the study of the treatment in this way, from the fact that so many uncouth, empirical, impracticable, and (therefore) dangerous maxims are on this point so constantly appearing in the medical publications of the day. As, for instance, the following: passing into the uterus an empty bladder, and filling it with fluid; injecting astringent or caustic solutions into the uterus; placing an alum plug against the os; injecting water into the umbilical veins of cord; passing a peeled lemon into the cavity of the uterus; leaving the patient upon her back, and allowing the uterus to fill with

clots ; applying a tampon ; and a host of others about equally as rational.

No one admires originality more than I, and no one more sincerely sympathizes with any investigator who enhances the powers of our art ; but it really seems to me that he who, in open contradiction to the accepted views of the profession, flippantly promulgates doctrines which lead the inexperienced into errors which sacrifice life, should by some tribunal be held responsible for the havoc he may commit. Some of the means just mentioned might accomplish good, and are only objectionable in so far as they are inaccessible, and distract the mind of the practitioner from more reliable ones ; others are clumsy substitutes for excellent procedures, long known and attested ; while a few make us shudder at the empiricism which begot them, and at the ignorance which allowed them to endanger life by committal to type.

Many of this kind of teachings are so plausible and seductive, as to induce the beginner to waste the precious moments, which should be allotted to *fulfilling an important indication*, in trying a bootless experiment, which may be decided at the same instant that the last ray of hope becomes extinct. Hence am I the more importunate for you to bear in mind that there is a goal to be reached, the accomplishment of an indication ; reach it by those means which seem best to you, but keep it always before your eyes ; never lose sight of it for an instant. Take, for example, the third indication : " Force the uterine fibres to contract." If, upon careful reflection, you conclude that this can be best accomplished by the introduction of a bladder, the application of a tampon, or the injection of water into the umbilical veins of the chord, adopt these means ; but, if it appears to you that there are others more simple, accessible, and certain as to results, why, let them be preferred. The *immediate indication is not to stop the escape of blood* (which the tampon, for example, would do), but to " force the uterine fibres to contract" (which the tampon will not, by any means, do).

MEANS AT OUR COMMAND FOR ACCOMPLISHING THE FIRST INDICATION.

Should you at once proceed to the performance of the second indication, without regarding the first, the patient will sometimes die during, and in consequence of your efforts to save her life, while a little previous attention to this point, which would not have occupied a minute, might have enabled her to have supported the suffering requisite for its fulfillment. To avoid so unfortunate a result, always " prevent death by syncope or exhaustion," by attending to the following injunctions, the modus agendi of which needs no explanation :

1. Throw open the windows, and admit a current of air.
2. Pull the pillows from under the head.
3. Give brandy and ammonia, if necessary.

4. Let an assistant stand ready to dash cold water into the face.

All this will occupy scarcely as much time as it has taken me to relate it; certainly not more than a minute, if intelligent and active aids are at hand.

MEANS FOR ACCOMPLISHING THE SECOND INDICATION.

Let the coat now be thrown off, and the hand passed up to the fundus uteri, in spite of the cries and resistance of the patient, and frequently the entreaties of her friends. There let the fingers be moved about gently, so as to titillate the uterine fibres, and cause them to contract; then let the indication be fulfilled; let whatever defeats full contraction and closure of the uterine vessels be removed. Should it be an adherent placenta, let it be peeled off; should it be clots of blood, or these with a detached placenta, let them be scooped out; and should it even be a second child, let it be delivered.

In a very trivial case of hemorrhage, pressure on the fundus uteri, or the use of ergot, might accomplish this indication; but in a really severe case, nothing less than the means advised can be relied on.

MEANS FOR ACCOMPLISHING THE THIRD INDICATION.

In accomplishing the second indication we simultaneously accomplish the third, for no means so surely force the uterine fibres to contract as the introduction of the hand into that organ. Other means, however, of great force and certainty, must be likewise adopted.

1. Keeping one hand in utero, grasp and knead the fundus with the other.

2. Order an assistant, *while you are thus engaged*, to pour a stream of water, from about four feet above, on the uterus.

3. Still occupying the hands as above mentioned, order a full dose of ergot to be given.

4. Pass a lump of ice into the vagina, and, if necessary, the uterus.

5. Throw an enema of ice-cold water into the rectum.

By a faithful application of these means, the obstetrician will, in the vast majority of cases, be gratified by success; they will generally rapidly produce full contraction, and check the flow. But, oftentimes, this gratification proves illusory; the lazy, or wearied uterus shows a tendency to become flaccid, to belly out with clots, and give just the same symptoms which it did at first. To keep up contraction, after it has once been accomplished, is then a matter of no minor import, and the means which I should recommend for this purpose, are as follows:

TO RENDER PERSISTENT A CONTRACTION ONCE ACCOMPLISHED.

1. Do not allow the binder to be applied for some hours, but

keep the uterus constantly in the hand of a trusty assistant for twelve hours, or longer, if necessary.

2. Apply the child to the breasts.

3. Keep up the free use of ergot; per rectum, if vomiting exists.

4. Should these means not fully succeed, rouse the dormant energies of the uterus by an enema of spirits of turpentine, with mucilage or oil.

5. Let the patient drink cold and acid draughts; do not annoy the stomach and lose this important avenue to the system by the use of gallic acid, lead, or opium, *which do not fulfill the indication.* The time may come for these, but this is not it.

AFTER-TREATMENT OF POST-PARTUM HEMORRHAGE.

In most cases the means mentioned will be sufficient, if instituted early enough, to arrest the vital torrent and turn aside the hand of death. I intentionally leave unmentioned a number which have, at various times and by good authorities, been much lauded, such as pressure on the aorta, the application of electricity, etc., etc., not because they are of no service, but because they are difficult of accomplishment, and consume time which could be better employed. But, even if the loss is promptly arrested, death may occur from extreme anæmia, profound prostration, or syncope which arises from these conditions, and it remains for me yet to point out the means for combating this state before our subject is complete.

THE SOURCE OF THE DANGEROUS SYMPTOMS.

The great root of the evil is now a paucity of blood (an *oligæmia*), too scanty a supply of the vital fluid to the brain, and other important organs of the body, which results in an imperfect performanceof the functions of life, and an impaired power of innervation, nay, I may say, an entirely subverted state of the nervous system. The balance-wheel is removed from the previously well-ordered machinery and all co-ordination and harmony; all regularity and certainty of action are for the time at an end.

THE INDICATIONS FOR TREATMENT

May be regarded as

(*a*) *Supplying artificially the brain and other important organs with blood.*

(*b*) *Preventing death from exhaustion.*

(*c*) *Quieting the perturbed state of the nervous system.*

(*a*) *This indication will best be fulfilled by these directions:*

1. Keep the head very low, and never allow of its being raised.

2. Raise the legs and arms in the air, and keep them so by supporting with pillows, or by binding the wrists to some point above the bed.

3. Should this not be sufficient apply tourniquets to the femoral and brachial arteries, and thus cut off the supply to the extremities, which for a length of time can dispense with it.

4. I would suggest the application of gentle pressure by roller bandages, applied the whole length of the arms and legs. This plan, which I have tried once, without marked result, promises something in the evacuation of the more superficial veins, and, by pressure of the muscles together, of those which are deeper seated.

5. The operation of transfusion should be resorted to in case of failure with the above.

(*b*) If the means above mentioned have fulfilled the indication for which they were instituted, the patient will probably rally, but at the same time we should not neglect "preventing death from exhaustion." For this object,

1. Introduce into the system (by the stomach if it will tolerate them, by the rectum if it will not), brandy, sulphuric ether, or ammonia, or a combination of them.

2. After the most pressing danger has passed, administer in the same way, beef-essence, milk-punch, or eggs beaten up with wine.

3. Prescribe and insist upon, *as most important adjuvants*, quiet solitude, silence, and darkness.

(*c*) But in spite of all that we can do, from the prostration of nerve-power, the almost utter abolition of biotic force, the tendency to death from exhaustion, and collapse may still be most marked. Opium is now the sheet-anchor; but in no stinted dose; four grains of the powder, or a drachm of the tincture, may be given every half hour, or even oftener, until the specific action of the drug, that power which at such times it seems to possess of pouring oil on the troubled waters, be fully developed. The dose of opium under such circumstances should be computed by its effects, and not by the amounts introduced into the stomach. Should the stomach not tolerate this medicine, but reject it and all else that is swallowed (as is often the case), a most precious resource will, I think, be found in the subdermic introduction of a solution of morphia, by the use of the pointed syringe of Dr. Andrew Wood, of Scotland. The method in which this is used is the following: the sharp point of the syringe is passed under the skin (giving very little pain), and ten drops of Majendie's solution of sulphate of morphia is injected into the subcutaneous cellular tissue. From this it is rapidly absorbed; so rapidly, indeed, that narcotic symptoms sometimes show themselves in two or three minutes after the operation has been performed.

By an energetic, judicious, and timely use of the means which have been herein advised, gentlemen, you will in many cases have

the proud satisfaction of saving human life, which under an empirical and routine treatment, or what is synonymous, a treatment adopted only because advised by authorities, without reference to, or reflection upon, the indications which you desire to accomplish, would inevitably have been sacrificed. Learn in this, as in every other emergency, to concentrate your efforts upon some one cardinal point; with energy and decision strike for its attainment, and the minor outposts will at once yield. In post-partum hemorrhage, as I have so often repeated, strike for contraction of the uterine fibres; attain this, and the Delhi of the case will be in your possession; "the back-bone of the rebellion broken;" and all subordinate points of resistance soon brought under the harmonious rule of law and order.

Do not imagine that any thing can, in the treatment of this accident, replace, or act as a substitute for knowledge. You have been so often informed that coolness and presence of mind are essential for its application, that I will not repeat the statement; let me, however, call your attention to the fact that coolness, under such circumstances, which is not based upon knowledge, is nothing less than the unblushing impudence, the calm effrontery of the charlatan who tampers with life, which he can not but feel under more able management might be easily placed out of danger. Without a thorough knowledge of the subject no honest and conscientious man need ever hope for calmness and self-possession, for him they are unattainable except by a mastery of the duties required at his hand. By the selfish, unfeeling, and stoical empiric, whose greatest care is to avoid exposure, and who never stands in judgment before that severe and uncompromising tribunal conscience, by him only can they be enjoyed while passing unprepared through so trying an ordeal.

MEDICAL SOCIETIES.

NEW YORK ACADEMY OF MEDICINE.

STATED MEETING, JAN. 4, 1860.—DR. JOHN WATSON, PRESIDENT, IN THE CHAIR.

THE business of the evening was the annual election of some of the officers whose term had expired, and while the ballot was being held, the President introduced the subject of diphtheria, and requested members to give their views of the differential diagnosis between that disease and croup, remarking that there is much confusion among writers on this subject. He then requested Dr. Francis, the oldest member present, to state his views on the subject.

DR. FRANCIS proceeded to give a brief *resumé* of the past literature on the subject—contrasted the opposing views of Dr. Bard and Dr. Bailey, of this city—said that Dr. Bailey's pathology was that it was an inflammatory disease, and that his practice, founded upon this belief—which was emetics, hot baths, and even the lancet—had never been improved. Bard, on the contrary, gave stimulants, but not with the success of Bailey. John Hunter agreed with Bailey. Dr. F. had great faith in vitriolic emetics, and gave instances where he had saved lives by heroic doses of the sulphate of zinc. He had given a teaspoonful of a saturated solution of sulphate of zinc every half hour. He does not use caustics or stimulants.

DR. R. S. KISSAM, next called upon, said he considered croup as an essentially inflammatory disease, although accompanied by a peculiar character of the blood. Croup first attacks the larynx, and extends down the trachea even into the bifurcation, accompanied by an exudation of fibrin. His treatment was calomel and tartar emetic in small doses. Formerly he gave of the latter a tablespoonful of a solution of 10 grains to a tumblerful of water, but now he found as good effects produced from a teaspoonful dose of a single grain, in the same quantity of water.

DR. JAMES ANDERSON agreed with DRS. FRANCIS and KISSAM. He recognized several kinds of croup, spasmodic and inflammatory, and as accompanying measles and scarlatina.

DR. P. VAN BUREN drew the distinction between those apparently alarming cases, where a child awakes in the night with a hoarse cough, which are trivial, not croup, and which speedily disappear with an emetic and some rubefacient, and the more insidious form

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NOTE.—The OFFICIAL report of the *Transactions of the Academy of Medicine* will hereafter appear regularly and exclusively in this Journal.

which is attended by an exudation. He was not wedded to any form of treatment. He approved in some cases of the local application of nitrate of silver; was generally disappointed in the results from venesection and leeching; had done better with calomel, but was not very successful with emetics. In the early stages a combination of expectorants and anodynes pleased him most, perhaps simply from their overcoming the irritation of the throat. He was also partial to the use of the vapor of warm water. He thought that calomel was to be given when early called, also expectorants and anodynes, and when a membrane was formed, emetics.

Dr. Percy thought that there had been an evident change in the type of the disease during the last few years, and that croup now presents a more asthenic character than formerly. He had never used calomel in its treatment, but had given alum in drachm doses, with the effect of reducing the pulse from 170 to 30. He had been in the habit of giving veratrum viride to control the circulation.

The President stated that what was especially desired was the differential diagnosis of croup in its various forms, and called upon Dr. Douglas for his experience in these diseases. Dr. D. stated that he divided croup into spasmodic, inflammatory with false membrane, and diphtheritic, and proceeded to describe the peculiarities of the latter, which differed markedly from that of the other classes. Especially, there was a discharge from the nostrils, which was thin, acrid, excoriating the nares, often sanious in severe cases, which was not present in true croup; the countenance was flushed, very different from the color in croupy pneumonia, but of a yellowish-red color. The sound of the cough was moist, and in croup sonorous and metallic. The breathing is not difficult, as in croup, but there is an utter prostration of all the powers. The treatment of diphtheria was the opposite to that of croup. He thought it possible that large doses of calomel might be useful in inflammatory croup, although he had never given them; but the treatment of diphtheria should be sustaining—quinine and iron—and as it was a blood disease, he considered calomel particularly inadmissible. He approved of topical applications to the throat, and if emetics were necessary, those should be given which would act without prostration.

Dr. B. F. Barker had seen this disease last winter in Albany and Troy, but none in New York until this last fall. He thought that it was now the general idea that it was a blood disease, with a local development affecting the throat and nares generally, and with an exudation of false membrane. He had seen it in especial localities, and in that region there were also cases where the membrane was exuded on mucous surfaces other than the throat, and related a case of this character marked by great rectal and vesical tenesmus, overcome only by chloroform and injection of solution of nitrate of silver. Chlorate of potassa and quinine in

full doses was the treatment he had used, particularly in some cases seen with Dr. Jacobi. There was a tendency to a destruction of tissue, and debilitating emetics could not be well borne. He preferred the turpeth mineral, first recommended by Dr. Hubbard, of Maine, in 1840, which acted speedily and without prostration.

During a suspension of the discussion which now ensued, when the ordinary business of the evening was called for, Dr. Squibb proceeded to show a new preparation of opium, intended to make a form not liable to any of the variations which are seen in those now used. Even pure opium varies from 2 to 14 per cent., and that common with us differed from 4 to 9 per cent. in the quantity of the morphia in various specimens. This he called the Liquor Opii Compositus, and it was of the strength that ordinary laudanum pretended to be.

Dr. Gardner resumed the discussion of diphtherite, by saying that he had seen some cases of this disease, and while he agreed with Drs. Douglas and Barker in the views they had expressed, thought they had omitted two distinct features peculiar to diphtherite ; that it was not only epidemic, but eminently contagious, and that a disagreeable diagnostic smell always accompanied the flow from the nose. He thought that a vigorous tonic treatment and local applications to the throat were demanded. The membranous exudation, he thought, differed from that of membranous croup by being less strong and tenacious, and not ever, in his experience, running down so as to make casts of the bronchi. He trusted that Dr. Jacobi, who had just entered and who had a large experience in this disease, would give his views.

Dr. Jacobi thought that the main feature of the disease was the dissolution of blood, while the membrane, he thought, was not different in any respect from that in croup. He thought that it would be difficult to make a diagnosis between them without seeing the membranes. He had seen it thrown off in all shapes and thicknesses—even one eighth of an inch thick—from the tonsils, and although it was generally limited to the tonsils and velum palati, he had seen it on almost every membrane of the body.

Dr. J. considered croup to be merely the filling up of the air passages with fibrin, and did not thus differ from diphtherite. The latter, however, is an epidemic disease, which he had never known croup to be, but sporadic. When the membrane descends into the trachea, he considered it to be croup. He sees no difference between the two diseases except in the dissolution of the blood. Tracheotomy in this disease is never successful.

Dr. Douglas inquired if he had ever found albuminuria, which the French state accompanies this disease.

Dr. Jacobi answered that he had examined the secretions of the kidneys in about fifteen cases, and had found it only in about twenty-five per cent., and in those only in the early stages of it. He noticed the smell mentioned by Dr. Gardner in every case, but

had never seen any such in croup, and considered this as important for diagnosis. He saw no utility in applying caustic to the membrane on which the membrane had exuded, and it is of no value to the surface from which it has been thrown off; but he touched the parts around to prevent the inflammation from spreading. It took several days for the membrane to become detached, and he had never seen this hurried by the caustic application; besides, it does no injury upon the pharynx, never interfering with the respiration.

The general treatment in slight cases upon which he relies, is the chlorate of potash, from a half to one drachm, in divided doses, per day, to a child from six months to four years old, and three drachms per day to those older. He thought that the treatment, though slight, is of the utmost importance, and should be continued for many weeks and even months, with the addition of iron (the muriated tincture in preference), as there is constant danger for a considerable period of the reappearance of the disease.

In severe cases the chlorate of potash is too slow when used alone, and he is accustomed to combine with it, or oftener precede it by, a few large doses of quinine. He preferred the solution in water with an addition of acid, because he had found that some cases did very well when treated by acids alone—generally the muriatic.

The severe cases of children, which came on very suddenly, are very apt to be fatal, from the overwhelming effect on the general system of the poison of the disease. It often reappears in children, after the lapse of three or four weeks even, and notwithstanding that the treatment has been kept up of quinine and iron, conjoined to a nutritious diet—beef-tea, etc.; these cases generally ending with convulsions of a mild sort, but yet marked, although differing much from the convulsions attendant upon scarlatina.

Where the running from the nose was very excessive and offensive, he had been in the habit of making injections of a solution of chlorate of potash, and oftener of chlorate of soda, as the latter will dissolve in four parts of water, while the former requires sixteen. He had also repeated the experiments of French investigators, and was convinced that the latter is a better solvent of plastic exudations. Dr. J. was not much in favor of caustics to the membrane itself, and thought that, if their application had any good effects, they were limited to the portions of membrane upon which no exudation had yet taken place, and which they might possibly prevent.

Dr. Barker thought he had misunderstood the last speaker in his pathological views, and inquired if he considered, as he had inferred, that croup and diphtheria were the same?

Dr. Jacobi replied: By no means. Croup he considered a local disease, but diphtheria was a blood disease. The membrane, in each case, he had said, was identical.

Dr. Barker said that, then, there was no point of controversy between them. He looked upon croup as a local disease, just as much as a pleuritis or a hepatitis. In croup, the local difficulty precedes the general disturbance, while the opposite is the case with diphtheria. In the latter, too, death rarely occurs from obstruction of respiration, as is the case almost always with the former.

The President was happy in having elicited this valuable discussion, because of the discrepancy of the statements of writers abroad—some stating that croup was contagious, while others ridicule this opinion. He drew the attention of the Academy to the writings of Guersant in the *Dictionary of Medicine*, and the contemporary productions of English writers, etc. He thought that this subject was one of great importance, and that it might be profitably continued.

Dr. Douglas inquired of Dr. Jacobi respecting the distinction in the countenance in cases of croup and diphtheria—in the former being pale, and in the latter not exactly flushed, but suffused, of a yellowish-red tint.

Dr. Gardner had seen great swelling of the glands and subcellular tissue of the neck, and inquired of Dr. J. if he had noted abscesses in various parts of the body, as in the kindred disease of scarlatina.

Dr. Jacobi has noted the color of the face, and attributed it to the little disturbance in the respiration. Abscesses he had noted but a few times; one he particularly remembered, which threatened the life of the patient.

On motion of Dr. Thomas, this subject was made the especial subject for discussion at the next meeting.

Dr. Peaslee presented a new instrument for inhaling chloroform.

The names of the following officers were then announced as having been elected to fill vacancies:

Dr. M. D. Van Pelt, *Vice-President;* Dr. Jacob Harsen, *Trustee;* Dr. Gurdon Buck, *Committee on Education;* Dr. James Warren, *Committee on Ethics;* Dr. S. S. Purple, *Committee on Admissions.*

Adjourned.

Stated Meeting, Jan. 18, 1860.—Dr. John Watson, President, in the Chair.

ACUPRESSURE.

After the reading of the minutes of the previous meeting, Dr. G. T. Elliott read a paper from the proof-sheets of the *Edinburgh Medical Journal*, sent to the Academy by the writer, Prof. Simpson, a corresponding member. The paper claims to assert and establish a new principle as a substitute for the ligation of arteries—arresting the flow of blood from them, by what he terms acupressure. The paper discusses, at some length, the subject of the tying of arteries—the end desired, the difficulty of closing and healing wounds by the first intention, owing to the presence in

the wound of foreign bodies, and the material for the ligature, whether made of hair, catgut, or silk. The experience of the present day has shown that metallic sutures can scarcely be considered as foreign bodies—that the healing process goes on around and over them with little delay; and from the recognition of this fact he had arrived at the present method, which he offers as a substitute for all ligatures, and after repeated trials upon the inferior animals, and latterly on several cases of amputation—one of the breast—where their success had been unmistakable.

The method proposed was by means of long slender needles, like the ordinary hair-lip needles, and of any desired length; and their application consists simply in starting externally from the flap or cuticular surface, thrusting the needle through the muscle down upon the artery, then bending the point round the vessel and passing it out again near its original point of entrance—thus inclosing the vessel in a sort of hook—and by bending the ends down upon the external surface, the closure of the vessel is made by the pressure of the vessel by the wire against the intermediate tissue. This, thus made, is generally tight enough (if there is any fault, it is too much so), but if by the subsequent shrinking of the muscle it should be found not to do, a figure 8 ligature or knot could be easily made around it, or a compress might be previously placed under the extremities, if necessary.

The advantages derived are, that no foreign body is left in the wound, and arresting by the consequent irritation its successful closure by the first intention; the ease of its removal, and at a very early period if desirable, and the ease and rapidity by which it can be applied.

DIPHTHERIA.

The PRESIDENT then announced the regular business of the evening—the discussion of the subject of Diphtheria—and wished in the first place to obtain from gentlemen present, attached to dispensaries and like institutions, some idea of the amount of the disease in the city, how prevalent it really was, and for this purpose called upon fellows present.

DR. JACOBI stated that there were 122 cases reported on the books of the Canal Street Dispensary, occurring since this year came in, and about 75 in his own practice and consultations. Other gentlemen had seen none of it.

DR. KRAKOWITZER gave a minute account of its endemic appearance in one family in Brooklyn—six cases occurring in one house in a family in excellent circumstances and of good general health, and in a healthy locality. He gave the reasons why he did not put so much reliance as formerly upon chlorate of potash as a remedial agent, as he thought that not unfrequently it had been supposed to cure the cases, when in fact it was simply the result of nature. That in the greater number of cases it was a mild disease, and would get well of itself; thought that there could be no

differential diagnosis made between it and croup, as croup was not a disease but a symptom—as dropsy, once considered a disease, is now recognized as a symptom of some disease of the internal viscera. Croup was a symptom of obstruction of the respiration, and could be produced by many diseases, as scarlatina, diphtheria, acute non-specific inflammation, œdema glottidis, and by traumatic inflammation from inhalations of steam, swallowing acid, or perhaps from direct wounds. Diphtheria deposits its lymph by preference on the pharynx, soft palate, etc., while cynanche trachealis prefers the trachea, etc. It appears also to adhere more closely than ordinary to the larynx than to the trachea, but this was perhaps due to the absence of motion of the parts rather than to any distinction in the character of the effusion.

In answer to various inquiries, Dr. Jacobi stated that he thought that the disease was not so rare as might be supposed by many stating that they had seen none in their practice; that he thought it rather probable that it was overlooked, supposed to be some other disease, and in mild cases passed by unnoticed. He was the more inclined to this opinion from the fact that the children of one of our most intelligent physicians had suffered from it without any suspicion of the nature of the disease; and if such well-educated men had not recognized it, he was confident that it had often been passed by unnoticed. The English physicians were ignorant of their own writings, for it was fully described in old Underwood's book, but they had forgotten it while discussing the writings of Brettoneau, of France. He considered it a general disease, as he had stated the previous evening, for various reasons, among which was the fact that he had seen this diphtheritic membrane in various localities of the body, under the scab of an impetiginous pustule on the exposed muscles of the leg, etc.

Dr. Hubbard had seen several cases of it occurring in one family, of which he gave a minute description, and recognized it as a disease distinct from croup.

The President said that this was not a new term, that it had been in existence since 1814, and he thought designated a disease which appeared at long intervals and in various localities.

Dr. Reese hoped that the discussion would not stop here; he rose only in the fear that it might, and that the opinion would go forth that there was a new disease about of a very fearful character, and of which various members of the Academy said that they knew nothing. He thought it was not so. It was only a new baptizing of an old disease, in the same manner as the old-fashioned catarrh was called influenza, and subsequently again went by the *alias* of grippe. It was too much the fashion to take the fanciful names of European writers and cry up a new disease. To-night he hears that croup is not a disease—to him croup is tracheitis, and tracheitis is croup, and nothing else. He saw plenty of sore throats every day, croups and quinsies and catarrhs, but he saw no new disease such as he hears spoken of here.

Dr. J. O'Reilly said that he thought it proper to state that he saw a good deal of disease, and that among his class of patients he had not seen any diphtherite.

Dr. Gardner said that for the first time the fact of the existence of this disease, diphtherite, had been disputed. Several respectable gentlemen had brought here an array of symptoms, fully and clearly described, from the invasion to the exit of the disease, which they called diphtherite; they had presented not isolated cases, but in the aggregate, many hundreds. The symptoms, while resembling croup and scarlatina sore throat, had both too much and too little for either of these diseases. If it was inflammatory croup, it wanted the hard, bounding pulse, while it was rapid and compressible. It had the free, offensive discharge from the nose, wanting in croup. It seemed to differ also from the sore throat of scarlatina, though it seemed to somewhat resemble an epidemic in New England some 25 years ago, called the scarlet fever and throat distemper, which attacked patients variously, together, singly, or alternately. He thought it due to the gentlemen who brought forward so many fully described and strongly marked cases, called diphtherite, that those denying the existence of such a disease should say what these are.

Dr. Richards, although not engaged in general practice, had seen several cases of this disease, and briefly gave the history of them. He thought it strange when some gentlemen and at some dispensaries had even seen none of it, that the local character of it had not been pressed more upon the attention of the members. He thought great light might be elicited by districting the city, and appointing a committee to report from each.

Dr. Hyslop had seen an unusual amount of throat diseases, but none which he recognized as diphtherite.

Dr. Worster had seen numerous cases of it, but did not think it a new disease. His own child had died of it seventeen years ago, and Dr. Delafield then said it was the fourth case he had seen. The disease had disappeared since that time till within a year or so, but now was very rife.

Dr. Hutchison, of Brooklyn, had seen several cases of it, the first of which he had supposed to be croup, but was now inclined to think that it was diphtherite; at any rate not such croup as he was in the habit of seeing.

The further consideration of this subject was made the special order of business for the next meeting.

A resolution from the Council, transferring $200 from the general fund to the building fund, was approved by the Academy. After which the Academy adjourned at 10½ P.M.

STATED MEETING, FEB. 1, 1860.—DR. JOHN WATSON, PRESIDENT, IN THE CHAIR.

DIPHTHERIA.

Diphtheria being the subject for discussion, Dr. Gurdon Buck read the following case in point:

H. B., son of a physician, aged 17 years, and possessed of a good constitution, complained on Wednesday, Jan. 18, of constant chilliness and inability to keep warm, though the temperature was mild. In the evening he mentioned to the nurse at his boarding-school that his throat was sore, and on the following morning he first complained of it to the Principal. His father conveyed him home to Paterson, N. J., the same afternoon. The next morning the father first noticed the existence of diphtheritic exudation in the fauces.

On Saturday, 21st, at 5 P.M., I first visited him. He was sitting up in an easy chair with a handkerchief wrapped round his neck. A blister two inches square had been applied below the angle of the jaw on both sides. The blistered surfaces presented no appearance of exudation. A slight degree of external swelling, with tenderness on pressure, was observable where the blisters had been applied, but no enlarged lymphatic glands could be felt. Depressing the tongue with a spoon for the purpose of inspecting the fauces gave severe pain, and prevented a satisfactory view being obtained beyond the velum. A patch of the size of three fifths of a twenty-five cent piece covered the buccal surface of the left half of the velum, and was of a pale straw color; the surrounding surface being of a pale red color. The uvula was very much elongated, swollen, and œdematous; the epithelium covering it being raised by serous effusion beneath it. Several times the uvula was projected forward in the act of coughing or hawking, and lay upon the tongue. The effect of this was extremely disagreeable, especially as the voice immediately became extinct. It resumed its natural position without interference, and thereupon the voice immediately returned. Deglutition, though somewhat painful, was readily performed. Respiration was not impeded or accelerated, nor the voice hoarse or otherwise changed. He coughed very seldom. His pulse was 100, and subsided to 94 and 96 in the night. The temperature was scarcely changed from the natural standard. The tongue was moist and pasty. The throat felt dry. The countenance was calm and natural. His bowels were quiet.

We commenced fumigating the throat as follows: boiling water was poured on catnip in a pitcher, and vinegar added to it. While breathing the fumes under an inclosure of blankets, Labarraque's solution of chlorid of soda was added by the teaspoonful in successive portions. The immediate effect of this application upon the throat was very grateful to the patient. Wine-whey and beef-tea were continued alternately as they had been during the day. He passed the night comfortably, sleeping at intervals. At 4 o'clock on Sunday morning (22d), when I left him, there had been no visible spreading of the exudation for the eighteen hours preceding, nor were there any signs of the disease having extended to the larynx. During the day, on Sunday, sulphate of quinine in doses of three grains were given every three hours. During Saturday and Saturday night patient had epistaxis from one nostril several times, which was excited by blowing his nose, but would not continue long at a time. Early on Monday morning (23d), Dr. Weller, who visited the patient often, noticed some increased frequency of the pulse and also of the respiration, with constant drowsiness, though he at the same time complained of inability to sleep.

At 6 P.M., I saw him again, and found a great change for the worse. As he sat reclining in his easy chair, I noticed his respiration was accelerated to 40 per minute, and noisy from the presence of secretions in the air-passages,

but not obstructed; his pulse was 140, and very weak; his hands cool, and the rest of the body scarcely of a natural temperature; a peculiar fetor was noticed in the breath; a colorless secretion was often blown from the nostrils, which, however, did not stain his handkerchief. Stimulants had been suspended since morning, from the supposition that they provoked the epistaxis. The quinine had also been discontinued, owing to its supposed effects on the head. His intellect was now becoming disturbed and he talked flighty, but would reply intelligently and promptly when questioned.

Stimulants in the form of brandy milk-punch were now resumed without delay, and given freely, and alternated with concentrated beef-tea. Sulph. quin. 1 gr., sulph. ferri gr. ij., were administered. A short time before my arrival, patient had had a copious, thin, dark, and fœtid stool, and at 7 o'clock two or three succeeded involuntarily, when an enema of pulv. opi. gr. ij., and tannin gr. x. was resorted to; after this there was no repetition of the evacuations. After the first involuntary stool, patient took to his bed and assumed a position on his right side, the respiration continuing unabated. Under the influence of the stimulants the surface of the body became hot, and communicated a pungent sensation to the fingers. The coma persisted and increased, and was accompanied with subsultus and tremors of the upper limbs. He continued to talk incoherently. When roused to take his drinks, he would promptly raise himself unassisted on one elbow and hold the glass in the other hand, thus evincing considerable muscular strength. All his symptoms grew rapidly worse; the tremors and subsultus disappeared, and gave place to profound stupor, in which condition he expired at about a quarter to three o'clock on Tuesday morning, 24th.

The inspection of the body half an hour after death detected the existence of but one purpuric spot, small in size, situated upon one of the lower limbs. An hour later, when the body was prepared, the physician (who has since informed me) discovered numerous spots of the character referred to, scattered over the trunk. No post-mortem examination was made. I saw the teacher on the Thursday following the death of the patient, and asked him concerning the existence of other cases, and learned that all the pupils were in good health with the exception of one who had been attacked with measles on the same day that the deceased had been taken sick.

Dr. Stevens asked if there was any discharge from the nose.

Dr. Buck replied that the patient often used his handkerchief, but the discharge was transparent and colorless. He also remarked that the border of the patch was of a pale rosy red.

Dr. Watson asked if there was any obstruction in the respiration noticed.

Dr. Buck replied that such a state of things did not exist, neither was there any hoarseness of the voice.

Dr. Douglas, considering that the respiration was forty per minute, asked if any pneumonia existed.

Dr. Buck stated that no auscultatory examination was resorted to, and that during the whole of Saturday night there was entire tranquillity of the respiration, and that the pulse, which did not exceed 100 at the time, subsided to 94 after the agitation of his arrival.

Dr. Briggs, of Richmond, Virginia, being called up, stated that for the last two or three months, quite a number of children were affected with that disease in Richmond. He had seen three such. The last was in a little girl, four years of age, whom he saw the same day that a small patch appeared on her left tonsil. The symptoms very much resembled those described by Dr. Buck. There was scarcely any fever, some vomiting, but no difficulty in the respiration. He stated that the treatment consisted in the application of the saturated solution of nit. silver to the parts once in six hours, calomel in doses of two grains every three hours, warm baths, together with warm applications to the throat on the outside, followed during the convalesence by the administration of spts. of turpentine as an alterative in twenty drop doses. By this treatment all his cases recovered. In relation to the hemorrhage and discharge from the nose, he remarked that Dr. Dean, of that city, had met with the symptom in two fatal cases.

Dr. Worster stated that he had seen in his private practice during January, thirty-two cases which presented diphtheritic patches upon the fauces and the parts in the neighborhood, but none had proved fatal. In two of that number the disease invaded the larynx and trachea, one of which was seen by Dr. Raphael with him. His treatment consisted in the local application of the sixty grain solution of nitrate of silver by the probang, and the administration of stimulants internally.

Dr. Watson asked wherein those cases differed from the ordinary aphthous ulcerations that were so frequently met with.

Dr. Worster answered that the difference was quite marked, especially in the fact that the patches in diphtherite were depressed in consequence of the edges of the surrounding tissue being raised.

Dr. Anderson had met with but one case of this disease. He was called to see a smart, active, little lad, about four or five years of age, with sore throat. Both sides of the neck were swollen, he was a little hoarse, and had some febrile excitement. On examining the throat, a small patch was discovered about the size of a split pea on either tonsil. The doctor was not a little alarmed when he discovered this state of things to exist, but did not apprise the family of the fact. All that was administered in that case was a powder of three grains of calomel, with prepared chalk, in a dry state. The next morning both the patches were removed. In conclusion he stated that he knew of very few cases of diphtherite having occurred in this city.

Dr. Woodhull stated that he had not attended so many sore throats in any month during the last fifteen years as during the one just past.

In no one of the cases that he had seen were the true characteristics of diphtheria, as described in the foreign journals, in any way marked. He stated that practitioners should be careful in their diagnosis of this form of disease, as he was inclined to

believe that some of the gentlemen who had reported such a large number of cases at the last meeting of the Academy, were in error.

Dr. Gardner stated that he had seen two cases of diphtherite since the last meeting, one of which he proceeded to describe briefly as follows: I was called to see a little child two years of age, who had been taken, according to the mother's account, with croupy symptoms two nights previous. On examining the throat I discovered marked redness, some enlargement of the tonsils, elongation of the uvula, and a muffled voice. Very soon after I entered the room the child was seized with a convulsion, which, however, soon passed off. From the time I first saw her, until the end of a week afterward, the pulse did not go below 150, nor the respiration below 40 per minute. At one time, for more than forty-eight hours, the pulse was 176, small, thready, and feeble, the respiration being about 76. There was no cough present, neither could any rales be detected on either side of the chest; and at no time was there any loss of intelligence in the child. Quite early in the attack, the nose discharged quite freely a serous fluid, which was sometimes mixed with blood. The breath was quite offensive.

The child took a teaspoonful of sirup saturated with chlorate potash every four hours; and every alternate two hours, three drops of the perchlorid of iron, also in sirup. It went on with this treatment persistently for a week, at the end of which time the pulse went down to 120. The child soon after recovered. No membranous patch was discovered upon the fauces, and hence no local treatment was required.

I saw a child in the same neighborhood, which had very much the same character of pulse, 150 to 160, and the respiration from 40 to 50 per minute. The patient, under the same treatment, after being four days in the state described, finally improved. I think some gentlemen err, when they consider that a disease is not diphtheria when they can discover no membrane in the throat, nor the discharge from the nose. The disease, as in the cases above described, is nevertheless the same, but they have no local manifestations, such as are seen in the more marked cases.

Dr. Worster stated that diphtheria had a tendency to spread through whole families; in all his cases he had noticed this fact.

Dr. Thomas stated that, since the last meeting of the Academy, the Assistant Secretary had lost a child four and a half years old, of that disease. That gentleman had been attending three cases of diphtheria, one of which died, the other two recovering. Very soon after, his child developed symptoms of the disease, and died after a very short illness, apparently of blood poisoning.

Since this epidemic has been prevailing, said he, I have seen two violent cases of diphtheria, together with several of a milder character, where only a few simple patches have existed on the tonsils. I will refer, however, simply to the two severe cases.

The first occurred in a young man, twenty-five years of age, whom I saw with the younger Dr. Ferguson, who at that time had been in attendance upon the case for four days. The symptoms were difficulty of swallowing, and a constant desire to blow the nose, as if to expel some foreign substance. When I first saw him, he was very much prostrated, with a pulse of 140; his face was of an ashy paleness, and he was suffering very much from dyspnœa, which latter symptom seemed rather to be the result of prostration than of any obstruction to the respiration. On opening the mouth and examining the throat, I found the whole of both tonsils covered with a membrane, which was not at all tenacious, but grumous in character. By squeezing the throat the substance could be displaced to a certain extent. It also filled both nostrils. After I saw him he sank very rapidly, and died within twenty-four hours after. No post-mortem examination was permitted.

The treatment consisted simply in the administration of tonics, stimulants, milk-punch, beef-tea, and carbonate of ammonia. The only local application to the parts was Labarraque's solution, which was thrown in through the nostrils.

The other case was in a child ten months old. The only symptom at first was partial inability to swallow, refusing to suck for some days. A small patch first appeared on one tonsil, and afterward on the roof of the mouth. After disappearing from these two points, it spread throughout both nostrils, which became perfectly filled with the membrane. Injections were made use of to the part, the substance was forced down into the throat, and then coughed up. The child is now doing well; and, notwithstanding that it is unwilling to suck, swallows fluids with comparative ease. The treatment was simply muriated tincture of iron, a small amount of chlorate of potash, and wine-whey.

Dr. McNulty stated that, though he had seen a good many sore throats, he had not yet met with a case of diphtheria that corresponded with the description he had seen given in foreign journals. He was satisfied that such cases had occurred in the city, but could not understand why one gentleman should see four hundred or five hundred cases in a short time, while others had not seen any at all. He practiced a great deal among the poorer classes, who occupied tenant houses, and who were subject to all the unpleasant influences that would be apt to bring about such a disease, but could not conscientiously say that he had ever met with a single case.

Dr. Bibbins, by the invitation of the President, made the following statement: I see diphtheritic patches quite frequently in connection with other diseases, but diphtheria, as a disease by itself, I very rarely see; when I do, the cases are sporadic in character.

He stated that he listened, with a great deal of attention to the cases narrated by Dr. Gardner, especially the one with congestion

of the pharynx, without any membrane appearing, inasmuch as scarlet fever was prevailing in that locality to a very considerable extent.

He (Dr. B.) had seen but two cases of diphtherite. One occurred in the person of a delicate unmarried female. The characteristic membrane showed itself in the throat. She was sick for two weeks, and it came very near proving a fatal case. The treatment that seemed to benefit her the most was the inhalation of the vapor of warm water.

The second case occurred in a person nineteen years of age, where the false membrane was mainly confined to the palate and tongue. The vapor of warm water was also used, and with very apparent benefit. No tonic treatment seemed to be indicated.

Dr. Gardner thought that Dr. Bibbins only selected the two cases as types, leaving out of consideration the diphtheritic patches which he acknowledged were seen in connection with other diseases. This latter class of cases (Dr. G. maintained) differed only from the former in being complicated.

In regard to the remark made by Dr. B., implying that one case seen by him was scarlatina, he stated the child referred to had scarlet fever a short time before, and had entirely recovered from it before any symptoms of this new disease appeared.

When I see (said Dr. G.) a case which has the appearance of croup or sore throat, characterized by such symptoms as I never saw before, with marked prostration, and respiration 70 per minute, I put that down as diphtheritic.

Dr. Peaslee, in relation to the pathology of the affection, thought that some were in error to suppose that a case should not be called diphtheria unless it was characterized by false membrane. I believe, said he, that we may have all the characteristics so far as the symptoms are concerned, of croup, without the existence of false membrane, that being unnecessary to complete its definition, so I believe in regard to diphtheria. I maintain that the two affections are entirely different in character; that while croup is a local inflammation, dipththeria is essentially a zymotic disease, the principal cause of which is in the blood itself. He was inclined to believe that the disease was generally epidemic rather than sporadic in character, not only from his own observation, but from the reports from foreign societies, where the whole subject had been learnedly discussed, and had been reported upon by committees. In relation to the essentiality of the appearance of the membrane, he remarked he had seen the same disease appear, so far as the general symptoms were concerned, and as such run through a whole family, that some of the members would have a false membrane in the throat, while in the others no indications of its presence could be discoverable. The appearance of the membrane was not essential, it being merely the result of an inflammation which had arrived to a certain degree of intensity in one case, and not in the other, it being a mere local manifestation of a general trouble.

Dr. Green was led to believe from what he had heard that evening, that there was a very wide range in the type of the disease, or that other diseases had been confounded with diphtheria. He had seen during his whole life but three or four cases of true diphtheria. In reference to the disease prevailing this winter, he stated that he had seen a large number of cases of a peculiar sore throat, which were more common than ever before. The disease in question presented a congested appearance of the throat as a whole, with inflammation affecting the velum and posterior nares, thereby giving a nasal sound to the voice. He did not regard these as cases of diphtheria, though some of them were quite severe. The diagnostic symptoms between that class of cases and diphtheria, and of diphtheria with croup, he referred to as follows: In the first place, said he, many of the cases which are epidemic in character and occur at this season of the year, have a greater or less tendency to congestion and œdema of the throat, which went to prove that though that symptom was also noticed in diphtherite, it was not to be regarded as pathognomonic. This state of things has nothing to do with true diphtheria. Between the two diseases which are more alike, croup and diphtheria, he made this distinction: Croup was a local inflammatory affection; there was no congestion of the parts as shown by tumefaction, preceding the deposit of the membrane as in diphtheria—no œdema of the tonsils preceded the exudation. The character of the deposit was essentially different—the membrane of croup being firm in consistence, while that of diphtheria was brittle, friable, and easily dislodged. The general symptoms were also very different in the two. Croup was a local disease attended with inflammatory symptoms, the other was a disease of the blood, asthenic in character, showing itself in the throat.

TRACHEOTOMY IN CROUP.

The effect of tracheotomy in croup and kindred diseases being the next division of the subject to be discussed, Dr. Jas. M. Minor, of Brooklyn, made the following statement:

I have operated six times, and have had two successful cases; three of the six were in a desperate condition at the time, the operation being resorted to as the only chance for saving life. One of the three cases offering favorable prospects for success, did remarkably well for four days, and encouraged the most sanguine expectations, when a membranous deposit made its appearance upon the wound, and extended almost simultaneously into the bronchial tubes, and death was the result.

By a reference to the statistics of this operation, both at home and abroad, I think that no doubt can be entertained in regard to the propriety of its performance, when all milder means have failed. If the chances of success are ever so small, it is censurable

to permit the little sufferers to die without this last resort, if they be not already moribund. The operation, we all know, is not a very painful one, and on the other hand, the relief afforded by it to a strangling child is immense. To smooth the pathway to the grave is as much our duty as to afford relief in any other way. The most important as well as the most difficult question to decide is, *when* to operate. It is difficult to lay down any certain rules. The surgeon must rely upon his individual judgment and the assistance of judicious counsel. If the face is becoming dusky, the lips blue, and the powers failing, it is almost too late. The operation should be performed before such a condition is arrived at. As regards operating when a membranous deposit takes place in the larynx, as in the present epidemic, it may be doubted whether any such expedient should be tried in a disease that is characterized by so much depression and want of recuperative energy. Yet even in such cases the general principle would seem to hold good, that the free admission of air into the lungs would give increased power to resist the other depressing influences.

Dr. M. remarked that he had used, with much satisfaction, the double canula with fenestra, corresponding with each other. This arrangement admits of continued experiments upon the permeability of the larynx to air by the stopping the external opening with a cork. If the patient can breathe with the cork inserted for twelve or twenty-four hours at a time, it will be safe to remove the tubes altogether. This canula, moreover, has the advantage of offering a free passage for the air at the first moment when the larynx becomes pervious, even when the cork is not inserted, the air seeming to pass through the fenestra by preference, allowing the resumption of the function of the larynx at the earliest moment, avoiding thereby risk of permanent changes in that most important organ.

The utmost possible care and ceaseless vigilance are necessary after this operation. Keeping the air of the room warm and moist, the inhalation of warm vapor, removing the inner canula frequently, cleaning and replacing it with the least possible delay, greasing it externally and internally at each removal with lard, allowing a little water occasionally to trickle down into the trachea through the canula to excite coughing, when there are indications of an accumulation of inspissated mucus below the insertion of the tube. All these points are of the greatest importance, the proper observance of which, effect as much in bringing about a good result as the operation itself.

Dr. Buck stated that he had records of twelve cases of diphtheria, exclusive of the one reported that evening. In all these twelve, the air passages were involved. In all except two, the diphtheritic patches were recognized upon the tonsils, velum palati, or fauces. In one of the other cases, the diphtheritic exudation spread over the wound after the operation, and not upon the throat. That, however, was in a young child, and of course the examination

was not very satisfactory. Of the twelve cases, eight were tracheotomized, six by himself, and two by other surgeons, who were called in while he was absent.

Of these eight cases none recovered. They survived from thirty-six hours to twenty-three days after the operation.

The immediate effect of the operation was most encouraging. It was delightful to witness the transition from immediate suffocation to tranquil breathing; but this relief was short-lived; soon there would be a recurrence of the obstruction by the accumulation of viscid mucus in the trachea. This symptom was only relieved temporarily by injecting through the tube a tepid solution of nitrate of silver, which would excite coughing, and in numerous instances a wad of secretion would escape. Sometimes these masses would escape without being expelled in that way. My statement, said he, does not give much encouragement for the operation.

I have had four cases of recovery without the operation, and these were also well-characterized cases of diphtheria, showing the exudation upon the tonsils, etc. In the treatment of all these, mercury was used in the form of calomel; also emetics, and the local application of nitrate of silver in solution, commencing with a scruple, gradually increasing to ʒi. to the ℥i.; and in one or two the fumigations of cinnabar were used in addition. I have not had a successful case of diphtheria.

It may be interesting to give in connection with the pathology of these cases an abstract of the history of one or two instances in which there would seem to be some alliance between this disease (diphtheria), scarlet fever, and erysipelas. A child that was cut for stone in the New York Hospital some time ago, was seized two or three days after the operation with fever which proved to be the precursor of scarlatina, which was characterized by an abundant eruption. In the progress of this fever the wound of the operation became coated over completely with a diphtheritic exudation. Notwithstanding that it was suspected at one time that the bladder was affected, the case turned out well.

The other case that I wish to refer to shows some connection between diphtheria and erysipelas.

Amputation at the shoulder-joint was performed consequent upon a formidable attack of plegmonous erysipelas of the arm. During the progress of the erysipelas the whole surface of the mouth and tongue, as far as could be inspected, was covered with a uniform uninterrupted coating, very like thin chamois; and, from the accompanying gastric symptoms, there was reason to suspect the existence of this membrane to a greater or less extent throughout the whole intestinal canal. I do not regard the operation as a remedy; it is only an expedient to prevent impending suffocation—to allow time for treatment and the efforts of nature to expel the membrane.

Dr. Voss stated that since the year 1853, he had performed

tracheotomy fifteen times, and had five recoveries. Fourteen of these cases, he remarked, were published in detail in the last number of the *N. Y. Jour. of Medicine* (Jan. 1860). Of the fatal cases, the shortest duration was two hours after the operation; the longest was thirty-one days. The tube was removed from eight to fourteen days. In none of these cases could false membrane be seen above the epiglottis.

In relation to the operation, he stated that the attendant relief was purely mechanical, and that its performance was indicated when the symptoms of the larynx did not yield to milder remedies. He made use of the solid tubes with no fenestra. The treatment after the operation consisted merely in keeping the tubes clean.

Dr. Buck asked Dr. V. if in either of his successful cases he had reason to believe that the disease, after the operation, extended down into the trachea.

Dr. Voss said that he did not discover any sign of the existence of that complication.

Dr. Green, in connection with the subject of tracheotomy, stated that Trousseau informed him that he had operated over two hundred times for croup. Dr. G. thought it might be interesting to know the practice of that gentleman in regard to two or three points that had been already alluded to in the course of the evening. He stated that Trousseau operated so soon as he was perfectly satisfied that the patient was laboring under true croup, and did not wait for any of those symptoms indicating cyanosis, and his success was equal to that of other operators. He used the double canula always; the outer one after introducing he allowed to remain, and never removed it until the child was sufficiently recovered to suspend its use altogether, unless there occurred this diphtheritic formation about the wound, when he cauterized the parts. He was satisfied by these means that he arrested the extension of the disease. He made a practice to insert the canula through an opening in the oil silk, thereby protecting the edges of the wound, and felt sure that he saved lives by those means. He also was in the habit of applying over the opening a cravat of gauze or flannel which soon became moistened, then supplying the respired air with vapor, a mode of procedure which was now obviated by keeping the atmosphere of the whole room in a moist state.

For many years he had been accustomed to apply nitrate of silver in solution through the tube, if he had reason to believe that there was any tendency to the formation of membrane below the point of operation.

The meeting was then adjourned.

NEW YORK PATHOLOGICAL SOCIETY.

REGULAR MEETING DEC. 28, 1859.—DR. DALTON, PRESIDENT.

Reported for the New York Journal of Medicine.

BY GEORGE F. SHRADY, M.D.

Encysted Iron Bullet in the Omentum.—Dr. Sands presented a portion of the great omentum, the diaphragm, and a section of the walls of the chest, which were removed from a dissecting-room subject, a Chinaman, who committed suicide, by hanging. The point of interest connected with the case was the existence of an iron bullet in the omentum, which had evidently been encysted there for a long time, and had taken a very roundabout course in arriving at the place where it was discovered. The precise situation of this foreign body was about two inches from the left border of the great omentum, and two inches before the greater curvature of the stomach.

A careful examination was made of the integument in the neighborhood, but no corresponding cicatrix was found. On searching a little further, however, a circular spot was discovered on the right side of the thorax, a little posteriorly, and upon removing the skin in this situation, and cutting open the chest, a well-marked cicatrix of the pleura was discovered, corresponding to the interval between the eighth and ninth ribs ; and on looking still further, another cicatrix was found on the pleural surface of the diaphragm, and still another, at the corresponding situation on the abdominal surface (of the diaphragm); all these being about the same size. The last-mentioned cicatrix was found to be connected by old adhesions with another in the right lobe of the liver, which, in its turn, was connected with a furrow in the organ—about half an inch in extent—as if the surface had been grazed by the projectile. it was a curious fact, noticed in the examination made, that the convexity of the lung tissue, between the point of entrance of the bullet in the chest wall, and its passage through the diaphragm was not injured, there being no evidence of cicatrical tissue present.

DR. KRACKOWITZER thought that the patient might have taken an expiration at the time of the injury, and thus the lung was lifted out of the way.

In answer to a question from DR. PEASLEE, DR. SANDS stated that there were several inches of lung tissue below the cicatrix, in the the pleura costalis.

DR. BIBBINS asked if the lung extended below the ninth rib behind, during inspiration?

DR. CLARK said that the lower limit of the lung on the right side, for auscultation and percussion, anteriorly, was the lower border

of the sixth rib in front, and the ninth intercostal space, or, perhaps, the top of the tenth rib behind.

In relation to gunshot wound, he stated that there was a surface production on each side of the diaphragm, most marked on the upper surface. It is not so true, said he, of the pleural surface, where the cicatrix was ; still, there is a considerable amount of adventitious matter extending two inches or more below the proper cicatrix, and three quarters of an inch above that. That the appearance leads him to suggest an explanation of some of the doubts and difficulties that have been in our way in the examination of the case. It is a very well known fact, that adhesions of most serous surfaces gradually break up where there is much motion in the parts covered by the membrane, and occasionally when they break up, leave shreds just as are seen in this instance. On seeing these shreds the inquiry occurred to him, whether the bullet might not have wounded the pleura pulmonalis, passed through the portion of the lung into the diaphragm, and the resulting cicatrix, after the lapse of years been removed, as the circulation in these parts is much more active than in the pleura costalis. That the under surface of the lung has been adherent, is pretty evident from the tags that can be drawn out.

Regular Meeting, Jan. 11, 1860.

Ulcer Perforating Femoral Vessels.—Dr. T. C. Finnell presented a specimen of a portion of the femoral artery and vein, removed from a man 24 years of age, who died from syphilitic disease in St. Vincent's Hospital. The patient was admitted on the 24th of November last, in a very prostrated condition, having suffered from the disease three months. He seemed to be rapidly wasting away ; was subject to night sweats, a cough, and was unable to retain any thing on his stomach. He complained also of great pain about the right groin, where was situated an ulcer occupying a space four inches by six inches below Poupart's ligament. There was also an ulcer on one of the ring fingers, the second joint of which was laid bare ; and in addition to this, he was suffering from phymosis, a concealed chancre, and an offensive discharge from the orifice of the prepuce. The patient was at once placed upon invigorating diet, and he for a time seemed to improve under the influence ; notwithstanding the ulcerated surface extended.

About the 20th of December, there was noticed a tendency to hemorrhage from the ulcer on the thigh, but by the prompt application of a compress and bandage, the bleeding was arrested. The next day the hemorrhage from the parts was very free, and the House Surgeon was obliged to make pressure upon the femoral artery, while Dr. Finnell was sent for. On arriving at the hospital, Dr. F. found a slough directly over the femoral artery, from which situation, whenever pressure from above was let up, a jet of blood would escape. He placed the ligature on the artery just

below Poupart's ligament; but the patient being so much prostrated, and having lost so much blood before, gradually sank, and died on the eighth day after.

After death, a portion of the muscles of the thigh which enveloped the vessels of the part, was removed. It was found that the slough had destroyed the artery and vein to the extent of an inch.

For three days in succession before his death he suffered from very violent chills, which were more severe in character than the Dr. had ever seen before. There was but one ligature applied to the artery, and that was on the proximal side of the wound; still, there was no hemorrhage from the distal side of the vessel. The death, of course, was due to exhaustion.

Dr. Clark asked why there was no hemorrhage from the vein, if only one ligature was applied.

Dr. Finnell could not understand why there should not be hemorrhage, both from vein and distal side of the artery. The artery an inch above the ligature was filled by a firm coagulum, as was also the case with the other divided extremity.

Dr. Clark asked if the chills were not connected with pyæmia—the pus arising from this diseased vein.

Dr. Finnell presumed such to have been the case, though no post-mortem examination was made with a view to establish the point. He stated that the suppurative discharge was immense.

Swallowing of a Nickel Cent.—Dr. Dalton presented a penny that was swallowed by a child four years of age, the week before last, on Wednesday morning, about half-past eleven o'clock. The penny was perfectly bright when first passed, it being a new one. The child received no treatment more than one or two doses of castor-oil, which were administered by the parents, and which operated moderately. After the second day no medicine was given; and on the third day the coin was passed, the little patient suffering from no unpleasant symptoms whatever, before or after. Dr. D. inquired as to the composition of the new cent, and was told that it was nickel and copper, in the proportion of one part of the former to three of the latter.

Dr. Clark knew of two instances in which the new penny had been swallowed. On a Sunday afternoon a Dr., said he, came to me and said that he had given his child one of those new pennies, and that it had been swallowed immediately. He asked me what was to be done. I told him wait, and let us see what nickel will do. I looked into the chemical dictionaries, and consulted authorities, but all that I could find was that the nitrate of nickel was poisonous. As to the copper, that had been swallowed so many times that I had no apprehension about it. I therefore told him that he had better envelop it in sweet oil and let it run. He did so, and the next day he came to me and said that the coin had gone through in the course of the night. The very afternoon of that day, Dr. Jas. R. Wood met me and said that a patient of his, a little child, had swallowed one of the new pennies. I acquainted him with

the results of my investigations in regard to the nitrate of nickel, related to him the case I had just seen, and told him to do the same as the other Dr. I met Dr. Wood shortly after, and found that the penny had passed the next day. In neither of the instances was the penny much changed in appearance. So I take it, when the foreign body is not retained any unusual time, there is nothing to be feared. In answer to Dr. Dalton, he stated that in both instances the passage was made in less than twenty-four hours.

Dr. Conant referred to a little patient of his, who had swallowed one of the nickel cents, and, during two and a half days that it remained in the intestinal canal, there was a very severe diarrhœa, which, however, ceased soon after the coin was expelled. The metal in that case was found to be slightly discolored.

Dr. Elliott referred to two cases that came under his notice. He was called to the first on a Sunday evening, and, at the urgent solicitation of the friends, gave an emetic, but with no benefit. The body was passed on the Wednesday following, three days after it was swallowed. He then gave such articles of diet as he thought would produce large discharges from the bowels, such as potatoes, mush and milk, etc. In the second case he ordered no medicine, only such articles of food as would produce large stools, and with a like result as in the former case. He learned that the coin was composed of nickel and copper. In consulting authorities, he found that the former metal was used as a tonic, but could not find any notice of its having poisonous properties.

Dr. Sayre, in that connection referred to a case he had under charge, of a child who had swallowed a glass marble four days before, and it not yet having made its appearance in the stools, he was a little apprehensive of the result, whether it could pass the ileo-cœcal valve as a flat piece of metal would do.

Dr. Dalton did not see why there should be any difficulty.

Dr. Conant remarked that the marble had the advantage of peristaltic action from behind, and had only to push itself past the folds of the valve, which were nothing more than reduplications of the mucous membrane. He knew of a patient that swallowed a leaden bullet that passed through in 24 hours.

Dr. Clark remarked that physicians had often met with cases of biliary calculi as large as the end of the thumb, and twice the size of an ounce bullet, which passed through the intestine without any difficulty.

Enlarged Spleen and Liver.—Dr. Harris presented the spleen and a section of the liver removed from a patient who died in the Floating Hospital, on the 16th of last October, from what was supposed to be pernicious intermittent fever. The patient was taken sick five days before he reached Quarantine. He had been for ten days at Savannah, discharging and taking in cargo; had always been healthy, with the exception of a severe attack of bilious fever, several years before, when engaged in business in the South. On

arriving at Quarantine, and when admitted, he was in a very prostrate condition, although his intellect was clear, and he was able to answer questions intelligently. He stated that in the course of his sickness he had vomited a good deal, had lost his strength very rapidly, and had taken a very considerable amount of medicine. The indication, of course, was the use of quinine, and inasmuch as he still vomited, the Dr. was obliged to resort to injections. The material vomited was of a dark color, granulated, and resembled very much the material of yellow fever. It was soon found that the quinine was not absorbed, and that he still continued cold and prostrated. The vomiting continued every half hour, and seemed to consist very nearly of pure blood blackened by the acids of the stomach. Some blood was also evacuated by the bowels. This state of things continued until the evening of the 16th, thirty-six hours after admission, when he died.

The post-mortem examination was held the next day. There was nothing peculiar noticed except the condition of the spleen, which, at the time of the removal, it being much enlarged, was so diffluent that a portion fell over the edge of his hand while he was holding it. The liver presented the ordinary color, and was also somewhat enlarged. The Dr. thought the specimens somewhat remarkable, inasmuch as the patient had only been sick in all for six days and a half.

In this connection, Dr. H. referred to a second case that was received in the hospital at the same time, who had been in Savannah, engaged in the same occupation, and remaining in the place the same length of time as the former, and was at the time of admission in the same condition as the other, with the exception, perhaps, that he was more insensible. Unlike the former case, however, the quinine administered was speedily absorbed, and soon produced its legitimate effects. The amount of quinine administered during five days, in this case, was some 450 grains. The first patient had no opportunity to take as much."

Regular Meeting, Jan. 25, 1860.

Proliferous Cysts.—Dr. H. B. Sands presented the specimen of a tumor which he removed on the Monday previous, from the breast of a young woman who was 22 years of age, and apparently in the enjoyment of very good health. This tumor was exceedingly hard, and somewhat elastic to the feel. It was situated at the inner and upper border of the left mammary gland, with which it was loosely connected. It did not possess the hardness of scirrhus, there being no nodosities upon its surface, and no enlargements in the glands of the axilla or elsewhere ; indeed, there was no interference of the general health which would lead to the supposition that the growth was malignant. One circumstance, however, said he, was suspicious—the rapid growth of the tumor. The patient only first became aware of its existence four months previous to its removal, it then being about the size of the end of the

thumb, remaining thus without much increase for two months, when it rapidly attained the size I mentioned. There was no interference in the menstrual function.

The patient suffered some pain in the tumor, which seemed to depend for the most part upon physical exertion. Dr. S. was uncertain in regard to the nature of the tumor, and determined to remove it if possible without excision of the entire gland; which was done, it being found necessary to take away only the edge of the organ. On reflecting back the integument and subcutaneous fat, fluctuation was discovered in the mass, and considerable care had to be taken that the sac (for the tumor was only formed of a single cyst) should not be opened. After its removal the cyst was found to contain about three ounces of fluid, which was bloody, and in a slight degree acid. The microscopical examination showed this fluid to be composed principally of blood corpuscles, many of them being in a perfect state, while others were degenerated; besides there were numerous fat molecules present together with larger granular masses of fat.

The tumor was shown to be a cyst, there being a very numerous production of fleshy-like masses growing from the interior. Some of these were very little raised from the internal wall, and were convex in shape; others were attached by a tolerably narrow pedicle, while others extended from one side of the tumor to the other in the form of a column or fleshy band.

The microscopical examination of the elements of the tumor, showed it to be fibro-plastic in character. He remarked that these tumors received different names; by Sir Benjamin Brodie they were described under the head of sero-cystic sarcoma, while Paget styled them proliferous. In almost all the cases, the observers have found more or less evidences of the structure of the gland present, in which the mass was imbedded, but in this specimen I had failed to detect the existence of the cœcal terminations of the lactiferous tubes; the structure being made up of cells, some nucleated, some elongated with two nuclei, and others fusiform. In fact all the appearances presented induced me to regard it as fibro-plastic rather than glandular in character, for it was certainly not cancerous.

Fœtus in Utero—Behavior of Cervix during Pregnancy.—Dr. Thomas presented a specimen of a fœtus in utero surrounded by membranes; the uterus being laid open vertically to expose every thing in actual position. The mother of this child was in Bellevue Hospital, and for quite a number of months was treated for phthisis and cardiac disease; during which period she was likewise pregnant, and had advanced to the seventh or eighth month of gestation. No particular attention was directed to her case until the day before yesterday (Monday, January 23d), when she was brought to the lying-in ward with puerperal convulsions. She was taken with a very violent one early in the morning of that day, which passed off, leaving her almost comatose, and in two or three hours afterward she was seized with another. Dr. Thomas

saw her about 2 o'clock, P.M., she having had by that time fifteen or twenty attacks. No œdema could be discovered any where, and she did not present the ordinary appearance of those suffering from uremic poison. I was inclined, said he, to give it a place in a class of cases which I had never met with—fatal convulsions without uremia. After a good deal of difficulty some urine was obtained (there having been previously suppression of the same). This was examined and found to be albuminous, and of a high smoky color, resembling very much London porter. This woman died twenty-four hours after the first attack of convulsions.

I made a vaginal examination during one of these attacks, and found that I could not introduce even the tip of my finger into the os. A violent convulsion followed this manœuvre. During all this time she was perfectly unconscious.

The chief point to notice in this connection, is the behavior of the cervix uteri during pregnancy.

I presume that all the members know of the theories advanced concerning the method in which the cervix disappears.

The old view is that the cervix is pressed out from *above* downward, that at about the fifth month it was about a quarter of its former length, at the seventh month half, at the eighth month three quarters, and that at the end of the ninth month it disappeared altogether, the uterus having by that time become a perfectly globular body.

The other view is the one promulgated by Stoltz, of Strasbourg, in 1826. His idea was that the cervix did not disappear from above but from below. For instance, at the end of the fourth month, that the os externum was softened and relaxed, that this condition of things traveled up until it reached the os internum at the middle of the ninth month, when the ring of separation between the two cavities of the uterus and cervix somewhat suddenly disappeared, in consequence of painless uterine contraction. Some, by adopting this theory, have thus in part accounted for the subsidence of the abdomen at the latter end of gestation. When I first examined the cervix I was inclined to believe that it went to prove Stoltz's theory to be the correct one, but subsequently making a more thorough investigation, I was forced to the conclusion that by this specimen neither theory was sustained; for the index finger could not be introduced at all into the os externum, and it was impossible to touch the fœtus, notwithstanding a considerable amount of force was employed.

Again: on post-mortem examination, I forced my finger through the os externum and into the os internum, which latter was certainly four times larger than the former. The os internum was perfectly distinct, and the cervix had not disappeared at all, but was somewhat increased in length, and was a trifle wider at its upper than lower portion.

The kidneys were found to be in a state of granular degeneration. One other point, in conclusion, he thought was worthy of

notice ; the cord which rested over the occipital region was tied in a knot.

"It must be remembered," said he, "in drawing conclusions from the specimen, that the woman was a primipara, and that the cervix always is more pointed in them than in multiparæ. This may in part account for the non-substantiation of Mr. Stoltz's views."

Dr. Dalton thought that he could say very positively, from his own observation, that neither the os internum nor os externum disappeared at all, even up to the end of the ninth month. "I am," said he, "very sure that I have seen both the os internum and the os externum clearly marked in a case that died during delivery." He had not much obstetrical experience, but as far as the touch was concerned he could easily see why there could be a doubt in the mind of the practitioner, whether or no, his finger came in contact with the os internum or os externum.

In regard to the relative size of the os externum in the specimen presented compared with others he had seen, if he recollected right, the external os was larger than the internal, when delivery had *not* taken place. In Dr. Thomas' case that condition of things was reversed, still it appeared that the internal os was about its natural size, while the external opening was unnaturally contracted.

Dr. Thomas stated that no obstetrician intended to touch the internal os, in making a vaginal examination during the labor, for at this period the os internum had entirely disappeared.

Dr. Dalton supposed that the obstetrician who examined a case in the first stage of labor, really felt the internal os.

Dr. Thomas did not think that such was possible.

Dr. Dalton stated that if Mr. Stoltz's view was a correct one, viz., that the cervix enlarged from below upwards, it was easy to see that, as the contents of the uterus came down, the external os, by virtue of relaxation, rolled out to make way for the internal os.

Abscess of the Brain resulting from Otorrhœa.—Dr. Thomas presented this specimen, with the following history and remarks :

Eliz. Nixon, æt. 14, unmarried, born in America, entered Bellevue on Monday, January 23d. The account obtained from her mother who accompanied her, was, that the girl had always been in good health, with the exception of slight otorrhœa which would occur at times, and convulsions which were clearly of a hysterical nature, and which had existed since last February ; one year ago. On the 17th of the present month, she was seized with a violent pain in the ear, which continued until the 21st, when it ceased entirely, the right ear at the same time beginning to discharge pus.

She now began to complain of headache and pain along the spine as far down as between the shoulders. During Saturday she vomited twice, and at times appeared delirious, though she answered questions intelligently. About twelve o'clock on the following night, spasm of the muscles of the face, neck, and mouth occurred ; this soon passed off, and in two hours was fol-

lowed by a convulsion, which lasted forty-five minutes. During the next three hours, two others occurred of a milder character, and shorter duration.

Two dozen dry cups were applied along the spine, and a turpentine stupe made to rubify the part after their removal. After this she rallied considerably, sat up in bed, talked rationally, and drank some milk. On the ensuing night, however, she had another convulsion, during which, she died.

Post-mortem examination showed abundant traces of pus at the base of the brain. At a point just above the petrous portion of temporal bone there was fluctuation, and upon incision, about one drachm of pus flowed out. The pus on outer surface of the brain evidently resulted from local meningitis.

Dr. Bibbins, in this connection, referred to a case that came under his observation while at the Randall's Island Hospital. The patient, a little child, had for some time been afflicted with otorrhœa with more or less hemiplegia. The Dr. noticed a suspicious purplish appearance behind the ear, which looked as if some small portion of the mastoid process was about to exfoliate. The child was not confined to his bed, and was doing very well when it was suddenly taken with a convulsion while the nurse was dressing it, and died before he could get to the ward.

A post-mortem examination disclosed a large abscess of one lobe of the cerebellum. It was a question that naturally suggested itself at that time, how the child could walk or even live with such an immense collection of pus.

HOSPITAL REPORTS.

NEW YORK HOSPITAL.

Report for the New York Journal of Medicine.

BY GEORGE F. SHRADY, M.D.,
LATE RESIDENT SURGEON.

Case 1.—Dislocation of Femur forward and upward.

Case 2.—Reduction of Dislocation of Femur after sixteen weeks.

In the records of the New York Hospital, I find, in the practice of Dr. Willard Parker, the two following cases of dislocation of the hip, which, I think, are of considerable interest. One of them is worthy of note on account of its rarity, and the other more particularly in connection with the length of time that elapsed between the receipt of the injury and the reduction.

The following is the history of the first case (dislocation of femur forward and upward):

Case 1.—*Anomalous Dislocation of the Femur, upward and forward, under the Anterior Spine.*—E. P., æt. 25, an Irish laborer, was admitted July 21, 1858, suffering from the above, which was caused in the following manner: He was engaged an hour or two previous oiling a heavily loaded gravel car, and while stooping under its projecting end some of his fellow-laborers heedlessly tipped it up, causing him to be struck across the lower part of the back, and crushed to the ground, with the left thigh twisted under him. On examination after admission into the Hospital, the following symptoms existed: The left lower limb was rotated outward, shortened three inches; the thigh slightly adducted, and moderately bent upon the pelvis; the knee slightly advanced beyond its fellow and semi-flexed; and the toes were everted so that the heel rested against the inner aspect of the opposite leg, just above the malleolus. Passive rotation of the limb in either direction caused him to shriek with pain. Eyed from behind, the patient being supported in an erect position, the buttock of the affected side was seen to be much fuller than the other, while the post-trochanteric depression was obliterated. The tips of the toes could only touch the floor. The trochanter itself was quite prominent, and, on comparative measurement, was found to bear its normal relation to the anterior superior spine, but the vertical distance from it to the crest of the ilium was three quarters of an inch shorter. The head of the bone could be felt, but not very distinctly, in a direction forward and upward from the trochanter. A slight contusion existed on the inner aspect of the left knee-joint.

The patient was etherized, and the existence of the dislocation, with the above unusual features, was confirmed.

In attempting reduction Reid's method was resorted to. Dr. Parker stood upon the left side of the patient, grasped the leg in his right hand, bent it upon the thigh, and then, with the other hand upon the knee, forcibly adducted and flexed the thigh upon the abdomen (the pelvis being supported in the mean time by an assistant). The thigh was rotated while in this position, then adducted, and the whole limb extended; but the head of the bone could not be felt to glide into the acetabulum, and the symmetry of the limb was not restored. This manœuvre being repeated, the usual dislocation upon the dorsum was produced. A third attempt brought the limb in its original position; ineffectual attempts were then made to reduce the luxation by means of extension and counter-extension, which being persevered in for a long time was given up. The doctor then directed an assistant to grasp the limb, rotate it inward, and make extension in the direction of the socket, while he himself, by direct manipulation, guided the head into its proper place; when the bearings of the limb were at once restored.

The patient for three or four days was confined upon a double inclined plane, and in the course of twelve days after was discharged cured.

Dislocation of femur, forward and upward, is a variety of accident that is exceedingly uncommon, and one which but few have ever seen. Sir Astley Cooper only refers to five such that came to his knowledge; and in all these the symptoms strikingly resembled those described in Dr. Parker's case. Of these cases two were recent; one occurred in the practice of Mr. Gibson; the other to Mr. Morgan. The reduction in the first case was effected as follows: extension was first made by pulleys. "Mr. Gibson, having a towel passed under the patient's thigh and over his own shoulder, raised the head of the bone, which now left its position at the anterior superior spine and gradually came down; and then turned the knee firmly inward, at the same time pressing it toward the opposite side," when the head glided into the socket.

In the second case, Mr. Morgan directed that extension should be made downward from the knee by means of a round towel, "while," said he, "I fixed the pelvis by sitting on the bed, and placing my foot between the scrotum and thigh. Three of our students then employed extension for about three minutes; the patient was then directed to raise his shoulders from the bed, and at the same moment extension was suddenly increased, and the thigh was forcibly rotated inward, the power of a long lever being obtained by bending the knee at right angles to the thigh, and grasping the knee in one hand and the foot in the other. This produced the desired effect, as the head of the bone returned immediately with a snap into its socket."

Dr. F. H. Hamilton in his recent work says: "In a majority of these cases the dislocations have been reduced by manipulation alone, or by manipulation aided by pressure. The limb should be raised in the usual manner at the knee and ankle, carried up toward the face, adducted, then rotated inward, gently adducted, and finally brought down again to the bed. At the moment when rotation and adduction commence the head of the bone should be pressed toward the socket by the hands, and, if necessary, lifted a little over the margin of the acetabulum, by moderate extension at a right angle with the body."

Dr. Lente saw a case of dislocation of the head of the femur forward and upward, which, however, was only the result of an attempt to reduce a dislocation into the ischiatic notch.

An interesting question comes up in connection with the treatment of these cases, whether Reid's method can be resorted to with advantage if the rent made in the upper portion of capsule is sufficiently extensive to allow the head of the bone to sweep around the rim of the acetabulum.

Case 2.—*Dislocation of the Femur, sixteen weeks' standing—Reduction.*—Jas. D., æt. 44, native of New York, was admitted in the service of Dr. Parker, Oct. 1, 1857.—Patient, sixteen weeks previous to admission, was driving a team of cattle with a load of lumber. In going down hill the oxen became unruly, and he was thrown from his seat in front of the cart beneath their feet.

He broke the force of the fall by catching hold of the cart, but could not extricate himself sufficiently soon to prevent his being run over. One of the wheels passed over his left thigh, at its upper part, in an oblique direction from above downward, and from without inward. In attempting to move after the accident he found himself unable to do so, experiencing at the same time a considerable amount of pain behind the trochanter. He also discovered that his left lower limb was strongly adducted, that there was also an unnatural depression behind the trochanter, and also a firm, hard swelling over the region of the foramen ovale. He was carried to a neighboring house, when a doctor was summoned, who wisely pronounced his injury to be a mere contusion, and despite the application of plasters and the like, the bearings of the limb was not altered. In the course of nine weeks after, the patient was enabled to hobble about, when he consulted a surgeon of Rome (N. Y.), who recognized the existence of a dislocation, but, failing to effect a reduction, advised him to go to the hospital. The position of the limb, at the time of admitting the patient, was just what it had been immediately after the accident. The foot, as he stood up, was advanced about twelve inches from the line of the body, the nates of the affected side was much flattened, the prominence of the trochanter was less marked, was pushed further back, though not materially higher than it should be. The patient was unable to adduct the limb at all, neither could this motion be caused by the employment of a very considerable amount of force, the rotation of the shaft was very limited, but seemed to be on a smaller radius than that of the unbroken neck. The foot was inclined a little outward. The distortion of the limb was so marked that it was difficult to place it in such a relation with its fellow so that its comparative length could be with certainty determined. The injured limb was estimated to be an inch shorter, measured from the pubis it was longer by an inch or more, and measured from the tuberosity of the ischium it was still longer. The lump over the foramen thyroideum did not move in the slightest degree with the motions of the femur. At a consultation held upon the case it was thought by some to be fracture of the neck of the femur, while others regarded it as a case of dislocation into the thyroid foramen. Drs. Parker and Halsted were of this latter opinion. Dr. Markoe supposed it to be an impacted fracture, and that the prominence was exostotic. It was determined to etherize the patient, at all events, in order to make a more thorough examination, and in case a dislocation was clearly made out to attempt a reduction.

The examination made was satisfactory, so far as the existence of dislocation was concerned, and the pulleys were applied, the old adhesions broken up, and the reduction accomplished. During the operation it was noticed that the pubic tumor broke up, and that the place was taken by the head of the bone, a fact which Dr. Markoe supposed to be due to the formation of a shell of bone over

the head of the femur, the result of an effort on the part of nature to form a new socket. This was the reason, doubtless, why the motions of the head of the bone could not be discovered previous to the operation.

The patient was confined in a double straight apparatus for about three weeks, at the end of which time he was able to get about on crutches. The motions of the limb at first were very much restricted, but after a while he was able to get around with more ease, and at the time of his discharge, on the fifth of November, the movements of the limb were almost perfect.

BELLEVUE HOSPITAL.

CASE 1.—EXSECTION OF THE ELBOW-JOINT.

CASE 2.—LIGATION OF THE PRIMITIVE ILIAC ARTERY.

Exsection of the Elbow-joint. Complete closure of the wound on the twelfth day. By STEPHEN SMITH, M.D., Visiting Surgeon to Bellevue Hospital. (Reported by JOHN G. JOHNSON, M.D., House Surgeon.)

Catharine Kearns, 30 years of age, single, domestic, good constitution, was admitted to the surgical wards of Bellevue Hospital, Dec. 9, 1856, for injury to the elbow. About four years before she fell upon the right elbow, causing considerable soreness and severe pain in the joint. Inflammation followed, and she showed the elbow to a physician, who lanced it, three weeks after the injury. From this time it continued suppurating till eighteen months since, when, a small piece of bone being removed, the discharge ceased. The joint now became stiff. Suppuration commenced about six months ago a second time, and last summer it was so painful that she was obliged to abandon her work entirely.

On admission the joint was anchylosed, and the arm nearly in the straight position. It was determined to break up the anchylosis, and establish passive motion. Accordingly the patient was placed under the influence of an anæsthetic, and the anchylosis was readily overcome. The arm was nicely adjusted in a splint, with which it was intended to keep up passive motion, but the joint and adjacent parts became so much inflamed that it was necessary to remove all dressings and use evaporating lotions and poultices. The arm again gradually assumed the extended position, sinuses formed, which communicated with dead bone both above and below the joint, while the elbow—that peculiar fusiform shape, indicative of disease of the articulation. Still no crepitus could be obtained on moving the joint surfaces. Patient was allowed an extra diet, and the medical treatment was tonic, and varied to meet the various indications of the case. A consultation approved of an explorative operation and of exsection of the joint, should the amount of the disease exposed in the course of the operation justify it.

The operation was performed on the 27th of May, 1857. A crucial incision was made on the posterior part of the elbow, and the integument laid back in four flaps, exposing the olecranon process. This was found to be diseased, and was removed with the forceps. The joint was now examined and found also in a carious condition, rendering exsection of the joint imperative. The dissection was carefully continued, the condyles of the humerus were then removed by the chain-saw, and afterward the head of the radius and the upper portion of the ulna on a line parallel with it. The ulna nerve was not seen during the operation. The wound was dressed by turning back the four flaps of the integument and uniting them with sutures. There was no pain or numbness complained of in the fingers after the operation.

Fourth day.—Wound united through whole extent by first intention, except at the joint, which has been kept open to allow the discharge; pulse 98, full and soft. Patient can nearly close her hand, and has good use of her little and ring finger, and no numbness—showing that the ulna nerve has not been injured during the operation; discharge but slight, and the erythema subsiding; some little discharge from the old openings which had communicated with the dead bone.

June 2d.—Very little inflammation around wound, and very little discharge from it; syringed out with the Labarraque and water, and kept in the sling.

Sixth day.—Continues doing well, sleeps well; anodyne of morphine is still given at night, as patient has been in the habit of taking more or less opium to quiet pain. Patient has better use of the forearm than before the operation; discharge from it is now less than ʒi. in the twenty-four hours; dressed daily.

Eighth day.—General health good; discharge still continues from elbow; no inflammatory swelling about it; discharge about ʒi.

Twelfth day.—The effusion which had surrounded the joint, giving the elbow a distorted appearance, has been nearly absorbed. The elbow is reduced to its normal size, and the wound united.

This patient returned to service, and so perfectly did the new articulation answer its purpose that it was for a long time unknown to the family which she entered that she had any imperfection in her arm.

Aneurism of Femoral and External Iliac Arteries—Ligation of the External Iliac—Return of Pulsation—Increase of Tumor after two years—Ligation of Primitive Iliac—Death on the 48th day. By Stephen Smith, M.D., Visiting Surgeon to Bellevue Hospital. (Reported by Charles Phelps, M.D., House Surgeon).

Mary Maguire, widow, born in Ireland, æt. 33, was readmitted to Bellevue Hospital August 21, 1858, with femoral aneurism.

She had always been accustomed to scrubbing and hard domestic labor; had never been *very* intemperate; had suffered from no venereal contamination; had no hereditary tendencies

traceable; and, up to date of commencement of present disease, had always been in good health and constitutional condition.

In September, 1856, while lifting a tub of water, with her knee raised against the tub, she had felt something "crack" in her right groin, but noticed nothing more till, walking home at night, she felt stiff and lame in that extremity. The stiffness and lameness so much increased by morning that she could scarcely rise. After three or four days she began to feel sharp, stinging pain diffused over the whole anterior surface of that thigh. And three or four days later she first noticed a small tumor, not larger than an almond, at a point which, from her own description, must have been just below Poupart's ligament, and well toward the mesian line. In from two to three weeks (Oct. 4) she was admitted to the hospital—service of Dr. Lidell—the tumor then having increased to about the size of a hen's egg. At this time the external iliac was tied by Dr. Lidell; the pulsation in the tumor ceased, the pain in the thigh disappeared, and for a time the size of the tumor slightly diminished.

The ligature came away upon the fortieth day, and recovery took place without secondary hemorrhage or other untoward accident having occurred, but pulsation in the tumor returned. Dr. Jas. R. Wood, whose service succeeded that of Dr. Lidell, projected the ligature of the femoral upon the distal side; but the operation was defeated by the elopement of the patient—four months after admission—and of her subsequent history, prior to readmission in August, 1858, no very definite account could be derived either from the statements of herself or of her friends.

Upon readmission—service of Dr. Stephen Smith—the tumor was found to present the form of a somewhat flattened hemisphere, having a diameter of about three inches at its base, and having rather more than half its volume below Poupart's ligament. The tumor was moderately tense; pulsation distinctly perceptible to both sight and touch; bruit constant, loud, and harsh; the pain down the front and inner aspects of the thigh intense. Through the month of September the tumor became more and more tense; and the pain so constantly excruciating as to necessitate the full and habitual influence of anodynes, and finally to rapidly exhaust the strength of the patient. In consultation the ligature of the primitive iliac was determined, and the time of operation hastened through imminence of external rupture of the aneurism.

On the 6th October, P.M., the primitive iliac was ligated by Dr. Stephen Smith, in the presence of Drs. Valentine Mott, J. R. Wood, Crane, C. D. Smith, Gouley, Van Buren, Watts, and others. The incision adopted was that of Erichsen modified: from the last rib downward to the internal inguinal ring—two fingers' breadth from the anterior spinous process of the ilium—straight above, but inferiorly curved inward. The cicatrix of Dr. Lidell's incision was about three lines from the termination of Dr. Smith's.

The conjoined tendon and the transversalis fascie were much thickened and agglutinated from the inflammation excited by the previous operation, somewhat embarrassing the present. The primitive iliac, enlarged to nearly the size of the normal abdominal aorta, was found without difficulty, and the ligature readily applied—the ureta was not seen. Pulsation in the tumor ceased immediately, and the tumor itself immediately became softer and less tense. The wound was closed by sutures and broad adhesive straps; adhesive straps passed over the tumor, and the limb wrapped in cotton. The patient was kept entirely under the influence of anæsthetics (mainly chloroform) through the whole operation. Not more than an ounce of blood (Dr. Gouley) was lost. Time occupied, not far from thirty minutes.

5 o'clock P.M.—Patient complaining only of some pain in the back, and burning in the wound; former pain in the thigh disappeared since the operation. With a view of anticipating any irritability of the stomach, *Ordered*, pil. opii, No. j. and tr. aconit. rad. gtts. ij. every hour. 9 P.M.—Some nausea, and at this time emesis.

Immediately after administration of the medicines, *Ordered*, pil. opi. and tr. ac. discontinued. Substituted S. S. morph. (U. S.) ℥ss. every hour.

Oct. 7, 8 A.M.—Slept somewhat through the night, but restless; mildly delirious, probable consequence of anodynes and stimulants given before the operation. 9 P.M.—Pulse has been moderately hard, full, and forcible through the day; respiration 16 in the minute. On the afternoon changed U. S. to Majend. sol. morph. gtts. x. every hour, with beef-tea and brandy. For a short time complained of the old pain down the thigh; not felt it at any other time since the operation.

Oct. 8, 8 A.M.—Since 12 P.M., S. Majend. increased to gtts. xv. per hour; pulse 100; respiration 16. 9 P.M.—Brandy ℥ss. and ℥j.; S. Majend. gtts. xv. to xxv. *pro re nata* every hour. Pulse full, 96; respiration 6 to 12; now complains of pain moving around the ilium from behind the outer margin of the tumor. Treatment continued.

Oct. 9, 8 A.M.—Respiration has ranged 6 to 10; pulse 92 to 96. *Ordered*, brandy ℥ss. per hour, with S. Majend. gtts. x. every one or two hours, *pro re nata*. 9 P.M.—Through the day, pulse has ranged from 88 to 100; respiration 4 to 10; has had brandy, beef-tea, and Majend. every hour *pro re nata*. Pupils have never been affected by the morphia. Has had no abdominal tenderness; some tympanitis; once this morning some pain in the back; mind wandering. Tumor apparently larger than before the operation; very soft; and of dusky appearance.

Oct. 10, 8 A.M.—Through the night, pulse from 76 to 96; respiration usually 8, once up to 12; greater part of the night very restless, even when respiration least frequent; had beef-tea

and brandy every hour ; S. Majend. *pro re nata.* 9 A.M.—Through the day, pulse 92 to 88 ; respiration 6 to 10 ; usually 8 ; quiet, but slept little ; tongue has remained dry ; brandy and beef-tea in the morning as often as every half hour ; S. Majend. gtts. x. every hour. Has had no pain ; no abdominal tenderness ; tympanitis as yesterday ; condition considered very satisfactory.

Oct. 11, A.M.—In the evening past, pulse came up 15 to 100 ; respiration 12 ; S. Majend. increase to gtts. xx. At the next hourly visit pulse and respiration were again reduced, and afterward raised through the night from 92 to 84, and from 10 to 7 respectively. Beef-tea, brandy, S. Majend. *pro re nata,* as usual. 1½ P.M.—Pulse and respiration through the morning varying about the same as through the night. Tongue tolerably moist, and not quite as black as yesterday ; awake all the time. Beef-tea and brandy every hour ; S. Majend. *pro re nata.* Dressings removed from the wound ; appearance perfectly healthy ; no inflammation except just at the edges of the incision ; upper extremity united by first intention for distance of one and a half inches ; straps replaced, sutures having been removed. 9 P.M.—Through the afternoon, pulse 96 to 84 ; respiration 7 to 12 ; beef-tea, brandy, and S. Majend. as usual. Commenced this evening the exhibition of tr. ferri. mur. gtts. ij. per hour.

Oct. 12, 8 A.M.—Through the night, pulse 92 to 80 ; usually 80 ; respiration 10, only one variation observed, then 9 ; pulse was more feeble, and beef-tea and brandy given every half-hour. 1 P.M.—Pulse been 84 ; respiration 10 to 12 ; now 14 ; *Ordered,* S. Majend. gtts. xx., and repeat at two o'clock ; tr. ferri. mur. gtts. v. per hour ; after an egg with relish. During the morning the right foot and leg became cold ; temperature restored by additional wrappings of cotton. 3 P.M.—Pulse 84 ; respiration 16. *Ordered,* S. Majend. gtts. xxx., and at request of patient another egg. 6 P.M.—Pulse 88 ; respiration remained 16 ; patient has all day suffered from pain in the right side, under the nipple, and extending backward ; sharp stitch catching her as she breathes. Physical examination to any extent prevented by the difficulty of changing her position, and by the feebleness of the respiratory sounds. *Ordered,* S. Majend. gtts. xxx., to omit tr. ferri mur. through the night, and cups No. viij. to the right side. 7 P.M.—Pain disappeared since the application of the cups. *Ordered,* S. Majend. gtts. xx.

Oct. 13, 10 A.M.—Through the night, pulse and respiration still continued more frequent, notwithstanding the hourly exhibition of S. Majend. gtts. xxx. to xl. ; respiration did not come down below 12 till 4 A.M. Since then the pulse has ranged from 92 to 84 ; respiration from 11 to 8, and S. Majend. stopped. This morning no thoracic pain ; considerable suppuration from the centre of the wound ; less from the lower extremity ; none from the upper ; the pus laudable, and coming from as deep in the wound as the external oblique muscle. This amount of commencing suppura-

tion, it was supposed, might explain the marked upward tendency of the pulse and respiration through the night, which, with the thoracic pain, had before created a suspicion of pneumonia.

9 P.M.—Through the day, pulse 84 to 92; respiration 8 to 10. S. Majend. gtts. xx. at intervals of one and two hours.

Oct. 14 and Oct. 26.—During this time the patient was seen at intervals of from half an hour to two hours, and the pulse and respiration observed at each visit. The pulse was found to vary only between the limits of 68 and 96, and was comparatively strong; and the respiration was found to vary only between the limits of 5 and 12, and was observed above 10 only upon a few exceptional occasions. During this time, S. Majend. was administered in doses of from gtts. x. to xxx., and at intervals of from one to two hours. Beef-tea and brandy were constantly given *pro re nata.*

Oct. 15.—Suppuration considerable; healthy in appearance; Wound looking well; slight redness upon one hip.

Oct. 17—Suppuration rather profuse, but apparently superficial; tongue moist and clean; felt hungry; had half a bottle of porter, to be continued daily.

Oct. 19.—Red sore, one inch in diameter over the sacrum; slough formed; ligature examined (Dr. Smith) for first time; not loosened; suppuration diminished.

Oct. 23.—Suppuration much diminished; ligature at the lower extremity of the wound; united for an inch above it, and for two inches at the upper extremity, with two small openings in the united portion—the one size of a pin's head, not discharging, the other rather longer, discharging considerably. Red sore not increasing; dry slough not yet loosened; appetite good; brandy given hourly with beef-tea and good diet; bottle of porter per day.

Oct. 25.—Suppuration much greater; ligature still firmly attached.

From Oct. 26 *till evening of Nov.* 1, S. Majend. given every hour, except upon one occasion the dose was increased to ʒi.; during this period the pulse varied from 72 to 84; respiration, 7 to 12.

Oct. 16.—Suppuration less, but very dark in color; pulse yesterday and to-day much less in bulk and firmness than heretofore; each day stronger P.M. than A.M.

Oct. 27.—Pulse stronger.

Oct. 28.—*Ordered,* enema; soap and water, Oiss., ol. ric. ʒi.; not given because demanded by any symptoms. Produced no movement.

Oct. 29.—Some tympanitis; *Ordered,* pil. plum. No. ij., pil. colocyn, Co. No. i. The tumor in the course of the preceding twenty-four hours, manifestly increased in size; particularly in prominence, from ½ to ½, apparently.

Oct. 30.—Pills not having operated, *Ordered*, mist. eccoprot. ℥ij., followed by enema ; no effect.

Oct. 31.—*Ordered*, pil. mas. hyd. (grv.) No. ij., pil. Cranii, (ol. fig. gtt. ½), No. ij., followed by two dejections ; black, and of moderate consistence, but rather small ; without much pain or inconvenience.

Nov. 1.—Two more small stools, and one of larger size. P.M., S. Majend. reduced to gtts. xxx. once in three hours.

Nov. 2.—Bowels showing a tendency to become lax, *Ordered* an astringent. Pulse 84 ; respiration 8 to 14.

Nov. 3 and 4.—Pulse 63 to 80 ; respiration 7 to 13 ; general condition still good.

Nov. 5, A.M.—Slight hemorrhage occurring spontaneously ; not more than ℥ss. ; blood florid ; not issuing per saltern, but trickling rapidly ; pulse 76 ; respiration 20 ; general condition unchanged ; mind quiet ; treatment unaltered.

P.M.—Has suffered through the day from smarting in the wound ; pulse 80 ; respiration 20; *Ordered*, S. Majend. gtts. xx. every one or two hours, as she sleeps or wakes.

Nov. 6.—Hemorrhage occurred again about midnight, in amount about ℥i., spontaneously as before ; patient lying perfectly quiet at the time, and for some time before ; smarting in the wound gone ; feels easy ; pulse 88 ; *Ordered*, S. Majend. gtts. xv. per hour. P.M.—Pulse 84 ; *Ordered*, tr. ferri. mur. gtts. v. per hour.

Nov. 7.—Remained quiet through the night ; slept ; pulse and respiration brought down; at 6 o'clock A.M., and at 3 P.M., spontaneous hemorrhages again ; last time not less then ℥ij. ; pulse and general condition unaffected

Nov. 8, 2½ A.M.—Hemorrhage recurred while under observation ; blood welling up from around the ligature, florid in color, and from ℥vj. to viij. in amount ; pulse 76, full and strong ; respiration 14, regular. 6 P.M.—Called to the ward, found she had lost ℥vj. to viij. of blood, and hemorrhage still continuing; arrested by compressing abdominal aorta ; after ten minutes compression, not recurring ; heretofore hemorrhage had ceased as it began, spontaneously ; pulse very much enfeebled, almost thready ; not affected by the hemorrhage in the morning, but countenance blanched then ; iron been continued ; beef-tea *ad libitum*, with beef-steak and oysters, and brandy ℥ss. per hour all the time.

Nov. 9.—Pulse 84, but small and weaker than yesterday ; respiration, 20 ; hemorrhage again, about ℥i. at 2 A.M. On neither occasion has hemorrhage been preceded or succeeded by any febrile or other constitutional symptoms, save the blanched skin and enfeebled pulse which succeeded the two large hemorrhages of yesterday. Her first intimation of hemorrhage has been the warm trickling of the blood upon the skin. Her appetite is unusually good. She has no hectic. She appreciates her danger, but is perfectly calm.

P.M.—Compression by compress applied over the aorta by Dr. Smith, but not sufficiently tight to affect the pulsation in the external iliac or femoral upon the left side; left on to enable the nurse to exert some control over the vessel, till the patient can be reached, in case hemorrhage should occur.

Nov. 10.—Pulse 84 through the day, and stronger; respiration 13 to 15; countenance better; appetite still good; considerable suppuration about the ligature; some pain in the wound.

Nov. 11, A.M.—Ligature drawn away; thirty-sixth day from operation; no adhesion; rather profuse suppuration from point of emergence; wound every where else united; no hemorrhage since the morning of Nov. 8; pulse 84 to 92; respiration 17; still continuing S.Majend. gtts. xxx. and brandy ʒss. per hour; diet strongly supporting.

Nov. 15, A.M.—Condition has gradually improved; no more hemorrhage; appetite still good; strength increasing again, though not yet quite up to the point it had reached when the hemorrhage commenced. On the P.M. of Nov. 13 was put upon acid gallic gr. iij. pr. die., and last evening the S. Majend. reduced to gtts. xxx. every two hours in place of every hour. This morning complains of some pain in the epigastric region and chest; supposed to be of gastric origin; pulse 88, and of usual character. 3¾ P.M.—Hemorrhage again recurred; rather more profuse than at any previous time; supposed to be somewhere from 8 to 12, or stopped by compression of the aorta; pulse after hemorrhage 112 and feeble; countenance still more blanched; mind quiet. *Ordered*, S. Majend. gtts. xxx. every hour, acid gallic gr. iij. every two hours, cold cloths to abdomen, tr. ferri. mur. as before.

Nov. 16, A.M.—Pulse 80 and feeble, but slow and steady; appetite good; no appreciable change; treatment of last night continued. 4 P.M.—Hemorrhage recommenced; but, happening to be present at the instant, it was checked before more than ʒi. of blood was lost. The pulse previous to this attempt was quicker and more frequent than usual. 9 P.M.—Another attempt at hemorrhage; stopped as before.

Nov. 17.—Through the day pulse 68 to 76, slow and steady; feeling well, and appetite good. 11½ P.M.—Another hemorrhage, some ʒij. in amount; has been restless all the evening; complaining of cold, and suffering considerable from nervous irritation. *Ordered*, brandy ʒj. every half hour; otherwise as before.

Nov. 19.—Hemorrhage of probably ʒiij.; stopped by mediate pressure upon aorta. 10 A.M.—Pulse 84 to 92; not appreciably weaker than yesterday; patient herself since the hemorrhage of Nov. 17 has ceased to expect recovery, but not in the least despondent; hemorrhage again commenced, but checked instantly in the usual manner; treatment still continued as before; the wound perfectly and smoothly united, except for an inch in the middle of its extent; tumor in great measure obliterated.

Nov. 20, 2 A.M.—Hemorrhage about ʒiv. 9 A.M.—Hemor-

rhage commenced, but checked immediately. 5½ P.M.—Hemorrhage again commenced, and again checked immediately; some pressure has been attempted by a small amount (2 lb) of shot, in connection with the compress, since Nov. 1; 7 lb of shot now put on —all she could be induced to bear—fastened by broad bandage. 12 M.—Hemorrhage of about ʒij.

Nov. 21, 10 A.M.—Shot slipped so as to be directly upon the wound; nurse said slipping very recent; upon removing them hemorrhage commenced more profusely than ever before; the flood issuing from the wound in a small jet of 1½ inches in height by 1½ lines in diameter; by compression of aorta not quite as readily checked as heretofore; loss of blood from ʒj. to ij.; the shot were not again applied; compress alone; no change in treatment: pulse 100. P.M.—Hemorrhage recurred at 11 to 2, and at 4 o'clock, but each time checked immediately.

Nov. 22, A.M.—Hemorrhage again at 2, and at 9 A.M., and each time checked immediately; pulse 68, slow and steady, though extremely weak; appetite still good. P.M.—Hemorrhage but once since morning; general condition the same.

Nov. 23, 6 A.M.—Died; through the night had hemorrhage nearly as often as once an hour; at 10 o'clock in the evening a large amount of blood was lost before the artery could be controlled, and though each succeeding loss of blood was small, the aggregate must have been several ounces in amount.

Autopsy.—An abscess was found occupying the iliac fossa, partially filled with grumous blood, and communicating with the artery at the point where the ligature was applied; the artery was completely severed and retracted, the upper portion being partially filled with a clot, but allowing the escape of an injection thrown into the artery above; no sign of peritonitis; tumor consolidated, and in process of obliteration.

PART SECOND.

CRITICAL ANALYSIS.

A Practical Treatise on the Diagnosis, Pathology, and Treatment of Diseases of the Heart. By Austin Flint, M.D., Professor of Clinical Medicine in the New Orleans School of Medicine. Philadelphia: Blanchard & Lea. 1859. pp. 473.

To have written a good book is a great glory at all times. To set about an enterprise, which shall add to the stock of facts in the world, with a true earnest purpose; to pursue the scheme with unflagging ardor; carry it through, and wind it all up with unmistakable ability; and stamp it with the scholar's mark, is, in these days, heroic in a large sense. New books with this stamp fall in our way now and then, and awaken immeasurable gratitude; and we can point, with proud satisfaction, to men now at work in this energetic New York School of Medicine, the results of whose labors we are waiting for as the fulfillment of brilliant promise. The treatise whose title stands at the head of this article, is the production of a man who has come to the help of this rising school, having sent before him a ripe reputation as scholar, author, and teacher. The size and importance of this last work entitle the book to an extended notice; and its author is entitled, as a new-comer in our midst, to an open-handed welcome.

As we do not undertake a complete analysis of Dr. Flint's work, we hope our readers will go through it. We would say, pointedly, read it entirely, as this gives us occasion to mention what seems to us the chief vulnerable point for criticism. We have found it necessary to read it entirely through to discover the author's views on each of several important points. It is clear that Dr. F. designed to baffle the critics, and therefore avoided such axiomatic and aphoristic statements as have rendered Dr. Stokes' writings inviting to the reviewer. The style is throughout stately and smooth, but the method of arrangement the reverse of what would appear the natural order. We should place the causes of disease first, and the effects afterward. But as the author gives reasons for his preference in the preface, it should not be regarded as a *casus belli*.

We are to occupy but little space, and propose to do no more than to call attention to some points in cardiac pathology which have occurred to us while reading Dr. Flint's excellent treatise.

Our author begins, rather abruptly, with "Enlargement," and we follow his example.

Human hearts vary immensely in size and weight. First, by

increase of muscular tissue; secondly, by dilatation of the cavities. These two causes of large-heartedness may occur separately —some say they do not; or they may be—almost always are or have been—combined coincidentally. The first cause—hypergenesis of tissue—is a protective change. It is a safeguard against the near or remote lesions which have occasioned the increase of muscle. Whether the muscular fibrillæ are multiplied, increased in size, or not, has been a subject for dispute. Dr. F., we believe, does not speak of it. We have no doubt that new ones are formed, as in the uterus; and, moreover, that the hypertrophic tissue has been first fatty, and then absorbed from some hearts which had seemed hypertrophied greatly during life, in the early part of long cases, and found after death to be chiefly dilated. Hypertrophy, then, is a conservative provision; so also is mitral narrowing, according to some writers.

The second cause of enlargement, *dilatation*, is by far the most disastrous in its results. It shows a weak heart, and Dr. Flint, like Dr. Stokes, insists that in treatment this should be remembered; and all who have walked La Charité will agree with them. The clinical observer often finds it difficult to determine to which cause a well-marked example of enlarged heart is to be referred. It is said that a nice differential diagnosis is more likely to be obtained by means of auscultatory percussion, the principles of which were first announced by Drs. Clark and Cammann in the *N. Y. Jour. of Med. and Surg.*, for July, 1840. It may be difficult to determine, even after death, whether the parietes are abnormally thick, or cavities dilated. The weight of the organ, emptied of liquid and coagulated blood, will then determine. The increase may be very great. Dr. F. has noted none heavier than forty ounces; we have seen one weighing forty-seven ounces. Dr. Clark refers to one much larger. Most museums contain examples of equal or greater hypertrophy. The best tables of weight and measurement we have met, are those hanging in the dead-room at Guy's Hospital, and copied, we think, in Wilks' Medical Lectures, lately published in the *Medical Times and Gazette.*

Both hypertrophy and dilatation may be said, in general terms, to be caused by obstructions somewhere in the course of the blood-current. The effects of stagnation always work backward. 1st, occurring in the systemic capillaries, there ensue swelling and increased pulsation of the neighboring arteries; distention of the aorta; stretching of the sinuses of Valsalva; more or less aortic regurgitation; and distention of the left ventricle. If temporary, and not often repeated, these circumstances lead to no permanent change in the heart; and even if some of them remain long, and are considerable in degree, they do not produce much sensible trouble, so long as the mitral valves hold out against the regurgitating current. When this partition has yielded, the lungs soon feel it, and embarrassed respiration becomes the cause of still greater stagnation in the capillaries of the surface, because

venous blood will not circulate freely through them. While the partition between the left auricle and ventricle is intact, the only result of obstruction to the aortic current is hypertrophy, or dilatation of this ventricle. If it be vigorous, it hypertrophies; if weak, it dilates. Almost always the obstruction occurs while the organ is in such a state that it can resist, and an increase of muscle occurs. Later, the new tissue undergoes fatty degeneration, becomes absorbed, and then the walls begin to yield, and dilatation results.

The left ventricle may become distended, or its walls thickened by, 2d, narrowing of the aortic orifice; 3d, by valvular imperfections—(*a*) rupture of them—(*b*) gluing together of their edges—(*c*) permanent retroversion—(*d*) vegetations, calcareous, fibrinous, etc. Some of these may be congenital; when they are so, they are supposed by some to indicate the results of inflammation occurring during fœtal life. In this way Wilks explains many malformations which others have attributed to arrest of development. Rupture of a valve at the aortic orifice occurs usually in laborers. Aortic lesions give rise to the greatest degree of enlargement—the ox-heart.

Another cause of enlargement of the left ventricle is an imperfection of the mitral valve, permitting during the systole the backward passage of a portion of the blood, which should be sent out through the aorta. This alteration of the valve is commonly the result of rheumatic endocarditis, and in the large majority of cases occurs in youth.

Both ventricles may be enlarged without disease of the valves, because of—(*a*) change in some of the properties of the blood, as is seen in alcoholismus, Bright's disease, pregnancy, etc.—(*b*) defective respiratory changes leading to capillary stasis—(*c*) capillary stasis from obesity—(*d*) kidney or hepatic—blocking—(*e*) ovarian, uterine, or other abdominal tumor—(*f*) fat in and on the heart—(*g*) adherent pericardium, etc.

The left ventricle is most liable to enlargement. The right auricle which retains longest the signs of vitality, is the least liable to hypertrophy. Enlargement of the right ventricle increases most the transverse diameter. That of the left shows itself most at the apex—lengthens the organ.

Enlargement of the right ventricle is more often seen in early life than that of the left, because alteration of the pulmonary orifice occurs almost never, except as a congenital affection. The right ventricle feels a great degree of mitral narrowing, and also pulmonary obstruction in the emphysematous, and becomes consequently dilated or hypertrophied. It may also become hypertrophied, Dr. F. thinks, because the left is in that condition, a fact attributed by our author to the interlaced arrangement of the muscular fibres of the two sides. It is said that fatty hearts are always large; it is certain that large hearts are very often fatty. Many of the facts and opinions on this subject now current, were

left on record by Ormerod and Quain, and were noticed in the *Medico-Ch. Rev.*, 1853. Latterly, the true fatty degeneration has been described as presenting two different appearances. In one case forming a thin layer of pale yellow fibres upon the inner surface of the ventricle, the rest of the tissue being unaltered in appearance. In the other class of cases which are most common, the color and consistence of the entire parietal thickness are changed, so that they look yellow and greasy, and can be broken down readily by the finger.

The question whether dilatation pure and simple, without hypertrophy ever occurs, has been much discussed. Stokes, we believe, states that he has never seen an example which proved that it might occur. On this point the following postulates may be set down: 1. A temporary capillary obstruction dilates the aorta, and by stretching the orifice produces regurgitation and dilatation of the left ventricle. 2. A permanent obstruction produces hypertrophy, if the heart be vigorous; but the new tissue may become fatty and be absorbed, and so leave no vestiges of new growth after death. 3. If the extra work be thrown upon the heart suddenly, as by rupture of a semi-lunar valve, and, as often happens late in life, when the organ, weakened by atrophy, fatty degeneration, or other cause, can offer no resistance, it may dilate till it reach a condition of paralysis. In the rapidly fatal cases of pulmonary congestion and lobular pneumonia, dilatation to the degree of paralysis sometimes occurs.

The measurement of the comparative degrees of dilatation and hypertrophy is complicated by the effects of *rigor mortis*. From this cause it rarely happens that the observer can determine precisely how much dilatation may have existed during life, from the necroscopic appearances. The degree and order in which post-mortem contractions affect the several heart cavities, have been carefully noted in the dog by Prof. Dalton. His investigations of these points furnish also a clue to the explanation of the fact that, usually, liquid blood is found in the left ventricle, if it is not empty, and coagula in the right.

The clinical history of uncomplicated hypertrophy has never been written. The influence of left ventricular hypertrophy in producing apoplexy has been much discussed. Our author agrees with those who suppose that the occurrence of cerebral difficulties, coincident with disease of the heart, is due rather to obstruction of the cervical venous circulation than to the forcible contractions of the ventricle. It is to be noted that a disposition to heart disease, atheroma, rheumatism, emphysema, and cirrhosis of liver and kidney may run in families; the circle of these mutually related pathological conditions beginning in the different individuals with different lesions, but all ending very nearly alike. If there be atheroma the danger of cerebral apoplexy is increased. Pulmonary apoplexy is more frequently the result of mitral obstruction than of right ventricular hypertrophy.

The signs on which the diagnosis of enlargement should be based, are very clearly presented by Dr. Flint; and at pages 70 and 71 a good summary of them is given. It is to be remarked that the author appropriates to hypertrophy, and its collateral points, no less than seventy-seven pages; whereas dilatation, which is by far the more important as regards prognosis, is finished in ten pages. It should be impressed upon all clinical teachers, however, that it is much easier to learn to enumerate the signs and rules of diagnosis than to recognize the existence of deviations of size, sound, and extent of impulse at the bedside; and to learn to estimate their value is the most difficult of all. There are some acute ears which detect an abnormal murmur in a large proportion of the miscellaneous cases in a hospital ward. It is fortunate when the possessor of sharp ears is also endowed with the judgment to measure aright the associate rational signs—hepatic, nephritic, and pulmonary conditions.

The paragraphs containing accounts of the anatomical relations of the heart; of the superficial and deep cardiac regions; the variation of the point of apex-beat with alteration of attitude; the signs obtained by percussion, are full, minute, and clear. No better exposition of these points can be found. The practical student must master these difficulties before attempting clinical auscultation.

The apex-beat is not produced "by the tilting forward of the point of the heart against the thoracic walls," "but by movements incident to changes in the form of the organ." The elongation of the heart, during the contraction of the ventricles, is not likely to be the subject of debate in this country—certainly not in New York, where so many opportunities have been granted of witnessing Professor Dalton's demonstrations of the fact. The author warmly repeats, in the work before us, the convictions which he has in other places so ably maintained, as to the falsity of the diastolic theory of Beau. In a note, giving Bamburger's unparalleled observation (p. 49) is cited a curious example of malperception of a sensation. Now, no one can doubt that a man may not believe what he sees with his own eyes, nor yet feel what he feels with his own fingers.

The value of epigastric pulsations, as a diagnostic sign, is well stated. These are not only annoying to the patient, but sometimes very puzzling to the practitioner; change of position will determine whether they are what has been called nervous. The relations of dyspepsia, intercostal neuralgia, and emotional excitement, to cardiac disturbance, receive sufficiently full notice. Bernard's experiments on the spinal nerves, and Dalton's on the pneumogastrics, are here apropos. The presence of a heaving impulse at the præcordial region may be considered good evidence of hypertrophy; but its absence is by no means proof that hypertrophy does not exist.

The abnormal modifications of the heart-sounds are drawn by

our author with a very nice distinctness. The essential characteristics of this portion of the book are probably well known, as they are taken from the prize essay which was printed in the *Transactions of the American Medical Association*, 1858. It is understood that Dr. Flint does not accept M. Beau's explanation of the cause of the first sound, viz., auricular contractions. The elements of the first sound are stated to be two: 1st, the rubbing of the apex against the thoracic walls; and, 2d, a valvular snapping or tightening. The second sound is purely valvular.

Our author, like Skoda, insists upon the distinction of the aortic and pulmonary sounds; and, in the course of the work, refers frequently to the importance of appreciating an exaggerated pulmonary second sound. After mentioning that the qualities of the first sound vary in different parts of the chest, and that it should be studied at the point of apex-beat, he says: If the second sound be compared on the two sides of the sternum, a difference in pitch, and other characters, is generally apparent. On the right side the sound is more acute, more abrupt, louder, and apparently nearer the ear. These differences, taken in connection with the anatomical relations of the aorta and pulmonary artery in these situations, and also with clinical facts pertaining to disease, warrant the conclusion that, when a disparity exists, the sound on the left side emanates from the pulmonary artery, and that on the right side from the aorta. The sound, in both situations, has an unmixed valvular quality; and, in view of the results of experiments made on living animals, and the effects of disease, it may be assumed that the valves of the aorta and pulmonary artery are the parts immediately concerned in its production. There is, then, a pulmonary second sound, due to the expansion of the valves of the pulmonary artery succeeding the ventricular systole; and an aortic second sound, referable to the semi-lunar valves of the aorta. The second sound of the heart presents the characters of that due to the pulmonary valves at the inferior border of the organ, i. e., just above the xyphoid cartilage in some persons—occasionally, also, in the third intercostal space on the left side, and over the body of the heart within the superficial cardiac region. Elsewhere within the præcordia, and at points removed from the præcordia, wherever the second sound is heard, it presents the characters distinctive of the sound produced at the aortic orifice." * * * It follows, from the facts just stated, that the aortic second sound is much more intense and widely diffused than the pulmonary. It remains unaffected by those causes which affect the movements of the heart within the limits of health, because it consists of a single element only, viz., a valvular element.

The pitch of the mitral sound heard near the nipple differs from the pitch of the tricuspid valvular sound heard near the xyphoid cartilage. Hypertrophy of the right ventricle is almost always marked by exaggerated pulmonary second sound. But

in functional disturbances, which so often tax the nicest acumen of the medical adviser, both second sounds—aortic and pulmonary—are alike exaggerated.

While speaking of the treatment of hypertrophy, our author offers a very just criticism of the plan proposed by Williams, which resembles that of Valsalva for the cure of aneurism, and also of the modern practice of La Charité. The teachings of Stokes are so generally remembered that there exists, in this country at least, a general unanimity as to the greater danger of dilatation as compared with hypertrophy, that our author expresses the commonly received opinion when he says, the remedial measures designed for the one should be so modified as not to favor the other. Apropos of a remark concerning the value of digitalis, it may be well to bear in mind Dr. Barlow's suggestion that foxglove is not useful in disease of the aortic valves, where the danger is syncope, but is very valuable in mitral regurgitation.

The section, which treats of the symptom and pathological effects of dilatation, is less satisfactory, because the author endeavors to make an unwarrantably refined distinction, by separating uncomplicated dilatation from that produced by valvular obstructions, and the remote obstructions of lung, liver, and kidney stagnation and fatty degenerations. To have deferred all considerations of dilatation until the above-mentioned causes of it had been mentioned would have relieved his own embarrassment and that of his reader. It seems clear that Dr. F. is conscious of being hampered by the method of arrangement he has chosen to follow. We do not think the following statement represents the fact with sufficient exactitude; at page 80, we read, "dyspnœa will be prominent in proportion as the right ventrical is the seat of dilatation." Dyspnœa undoubtedly exists under such circumstances, but in the above-mentioned statement the causative chain is reversed. Pulmonary obstruction is the cause of the dyspnœa, and also of the right ventricular repletion. The lung engorgement the right ventricle overcomes if it can, by becoming hypertrophied, but this contest soon ends, resulting almost universally in distention of the cavity.

Dr. Flint remarks truly, that patients with heart disease do not always emaciate. We believe it is a fact, that the most numerous candidates for this distinction are drawn from those families whose inheritances are large livers, vigorously developed organic nerves, and broad-based skulls; those, in short, who nourish themselves without trouble; we should except those liable to endocarditis in youth, and cases congenital. The whole of this section is well summed up in the statement, that the prospect of life and tolerable health is less in proportion as dilatation predominates. Consequently, the great end in the management is to increase the muscular power of the heart. The author's suggestions on this point are in every respect admirable.

Chapter second treats of atrophy, fatty growth, and degeneration, and would naturally terminate by rupture. Here attention is drawn to the sign of softened heart, first pointed out by Graves and Stokes, as occurring in continued fever, and recently observed to occur in the initiative and later stages of variola and scarlatina. The failure of the first sound or its replacement by murmur, should serve as a warning not to withhold stimulants.

Chapter third opens with the valves and orifices, and embraces the consideration of numerous lesions and pathological effects. Lesions of fœtal life affect the right side, as a rule. Those of youth and adult life very rarely involve the tricuspid or pulmonary valves; a brief and clear summary is given (pp. 118, 121); as a rule, the importance of the above-mentioned lesions varies with the degree of obstruction or insufficiency. It is proper to note, however, that the amount of enlargement of the heart is not invariably proportionate to the amount of obstruction or regurgitation, but may be dependent upon causes subsidiary to the valvular lesions. Cases illustrative of this statement are profusely scattered throughout our periodical literature. Many remarkable ones have been published by Dr. Barlow. At page 131, occurs a criticism of King's safety-valve theory; Dr. F. admits that Dr. Hunter's opinion is probably correct which recognizes that the tricuspid valve is so arranged as to permit, under certain circumstances, a greater or less amount of regurgitation.

Among the effects of valvular lesions, obstruction of the coronary arteries is to be mentioned. The author here takes occasion to deny that angina pectoris can be in the majority of cases justly attributed to disease of the nutrient arteries of the heart.

The importance of palpitation as a means of diagnosis between organic and functional disease, is very clearly put. (See pp. 134.)

The section which treats of pulse, will be found very profitable. The remark is, however, to be borne in mind, that the diagnostic value of the abnormal variations of the pulse depends not on the characters intrinsically, but in a great measure on the associated circumstances. Barlow's rule is always a good one—that the pulse in disease of the aortic valves is large, splashing, and regular; in mitral disease, small and often intermittent.

Concerning venous turgescence, our author says this symptom, though wanting in precise diagnostic significance, possesses considerable value, if taken in connection with the physical signs; it is not always an abnormal indication, as Dr. Sibson has demonstrated. Two or three pages are here devoted to the consideration of the emboli, to which much importance has justly been attached since the publication of Virchow's researches in 1845, and of Kirkes's essay on the detachment of vegetations from the valves of the heart. The lectures of Dr. Wilks are well worth consulting on this point. But as Dr. Flint does not pretend to have made any observations of his own on the effects of migratory plugs, this section need not detain us. Passing over the pul-

monary affections due to cardiac disease, we come to Chapter fourth, which treats of the physical signs of valvular lesions; this embraces sixty pages, and contains much that is notable and worthy of repetition; most of the points are, however, contained in the following recapitulation.

SYSTOLIC MURMURS.

MITRAL REGURGITATION.

Maximum of intensity at or near the apex of the heart, comparatively feeble or wanting at the base.

Not propagated above the base of the heart; not heard over carotids; often diffused over left lateral surface of chest.

If heard in the interscapular space, most intense near the lower angle of scapula.

Aortic second sound weakened, but distinct.

Pulmonic second sound intensified.

Mitral valvular element of the first sound more or less impaired.

AORTIC DIRECT.

Maximum of intensity at or above the base of the heart in the second or third intercostal space, near the sternum. Intensity notably diminished over body of heart, and at the apex.

Propagated above the base of the heart, and often heard over carotids. Rarely heard over left lateral surface of chest.

If heard in the interscapular space, most intense as high as the spinous ridge of scapula.

Aortic second sound often more or less indistinct.

Pulmonic second sound less frequently intensified.

Mitral valvular element of the first sound not impaired.

The murmur, in a certain proportion of cases rough, but in the majority of instances soft; the pitch varying, in the majority of cases, between the sounds represented by the letter *r* and the syllable *who*, whispered.

DIASTOLIC MURMURS.

MITRAL DIRECT

Occurs just before the systolic or first sound.

Often associated with a systolic mitral regurgitant murmur.

Maximum of intensity over body or apex of heart.

Feeble and often not appreciable at the base of the heart.

Mitral valvular element of first sound may be impaired.

Aortic or second sound may be normal.

Pulmonic second sound intensified.

AORTIC REGURGITANT

Replaces or follows closely the diastolic or second sound.

Often associated with a systolic aortic direct murmur.

Maximum of intensity over body of heart, near the sternum.

Generally appreciable at the base of the heart.

Mitral valvular element of first sound not impaired.

Aortic second sound often impaired, and sometimes extinguished.

Pulmonic second sound less frequently intensified.

Always feeble in comparison with the intensity which systolic murmurs often present; the quality almost invariably soft; the pitch generally lower than systolic murmurs; often represented by the whispered word *awe;* rarely diffused without the præcordial region.

The following practical precepts are enforced: Serious lesions are by no means to be predicted on the existence of a murmur of organic origin, for an intense murmur may accompany trivial le-

sions, and on the other hand, the most serious lesions may give rise to a feeble murmur. Diffusion of a mitral regurgitant murmur without the præcordial region, is in general considered as denoting regurgitation, but is in nowise a criterion of the amount of valvular insufficiency. As a means of distinguishing inorganic from organic murmurs it is said, first, that diastolic murmurs are always of organic origin; and, secondly, organic murmurs are usually constant and persistent, while inorganic murmurs, wherever produced, are fluctuating and variable, being sometimes discoverable only when the body is in a certain position. An inorganic murmur is invariably soft and feeble. Those of organic origin are generally rough and intense; and, again, in the vast majority of cases in which a murmur is inorganic, the heart is not enlarged.

As an introduction to the consideration of abnormal modifications of the heart-sounds in cases of valvular lesions, our author observes: The study of the murmurs has so much engrossed the attention of clinical observers of late years, that the heart-sounds have not received that attention which their importance claims. Abnormal modifications of the heart-sounds afford, in certain cases, as has been seen, valuable aid in the localization of murmurs. They also serve to supply in some measure information which, in a pathological point of view, is far more important than to determine the existence, situation, and character of lesions, viz., respecting the amount of damage which the valves have sustained.

Purring tremor is not a sign of much practical value, because it is present only in a small proportion of valvular lesions. But when present it has a pathognomonic significance. It accompanies both mitral and aortic lesions. The diagnostic characters of lesions affecting the several valves and orifices are very clearly and concisely stated pp. 209–217. We have met nothing better in any work than the practical suggestions concerning the treatment of these lesions. The section closes with the following judicious advice: The prognosis to the friends of the patient should be cautiously given. The duration of life, except in cases of advanced disease, is extremely variable. There is, on the one hand, a liability to certain accidents and incidental affections, which may prove fatal unexpectedly; and, on the other hand, patients often live for a long time after the signs and symptoms denote lesions of a most serious character.

Most of the facts relating to congenital misplacements, defects, and malformations of the heart presented in Chap. v. are credited by the author to the treatise lately published by Dr. Peacock.

The section on coagula in the cavities gives occasion to the suggestion of the use of ammoniacal remedies, as prophylactic of coagulation, based upon the researches by Dr. Richardson. It is to be noted, however, that the conclusions of the very remarkable essay of Dr. R. have been recently pronounced fallacious, but have not been by any means proven to be so. It is curious matter

of history that ante-mortem clots, softened in the centre, were once thought the result of pyæmia. Angina pectoris and enlargement of the thyroid body, and prominence of the eyes, occupy a portion of the sixth chapter. Reduplications of the heart-sounds is considered to be one of much diagnostic value, and is satisfactorily explained by supposing that the two ventricles fail to contract consentaneously.

The inflammatory affections of the heart, which Dr. Stokes places at the commencement of his classical work, are deferred by Dr. Flint till the latter half of the treatise before us. We do not think we can find any other fault with the chapters devoted to their consideration. Inflammation of the lining membrane receives but thirty pages. Our author while admitting the existence of Bouillaud's disease, which some have denied, cautions inexperienced observers against the mistake of regarding the vermilion stains as evidences of inflammation. Some importance is attached to the highly interesting experiments of Dr. Richardson on endocarditis artificially induced by the injection of lactic acid.

The section on pericarditis, though long, is concise enough. As regards prognosis the well-known distinction in respect to fatality between that produced by rheumatism and the forms occurring during the exanthemia, pyæmia, and Bright's disease is plainly stated. All clinical observers ought to be prepared to find in the dead-house cases of pericarditis which had been latent to that degree as to have been entirely unsuspected.

In any work on the heart no chapter is more important than that which treats of the functional disorders of the organ. Our author seems fully aware of this, and has well considered the subject in all its bearings. He says truly, that the discrimination of functional from organic affections can only be made by one who is thoroughly acquainted with practical auscultation. The importance of a correct diagnosis as regards prognosis and treatment can not be overstated.

The work concludes with the consideration of thoracic aneurism. The student will find here all that he need seek, in books, to enable him to diagnosticate this formidable and unmanageable disease. The treatment of this affection is so hopeless that the practitioner need hardly regret that a positive diagnosis is rarely practicable before external bulging or a pulsating tumor have rendered the patient's doom evident to his own eyes.

In closing this brief notice we can find no better way of expressing our opinion of Prof. Flint's labors, than to say that the author has a right to feel satisfied, as his readers are sure to be gratified. C. F. H.

Critical notices of recent works on Infantile Pathology. By A. JACOBI, M.D., Physician to the Jews' Hospital and to the Canal Street Dispensary.

1. H. MEIER, *Das Kind in Seinen Ersten Lebensjahren. Skizzen über Leibes- und Geistes-Erziehung.* Leipzig, 1859. pp. 186. *(The First years of the Child. Sketches on Physical and Moral Education.)*

2. E. LE BARILLIER, M.D., *Traité Pratique de l'Hygiène et des Maladies de l'Enfant.* Paris et Bordeaux, 1859. pp. 274. *(Practical Essay on Hygiene and on the Diseases of Childhood.)*

3. GUIET, M.D., *Conseils aux Mères ou de l'Hygiène du Nouveau-Né et de l'Enfant à la Mamelle.* Le Mans, 1859. *(Advice for Mothers; or, on the Hygiene of the New-born and Nursling.)*

4. T. HERBERT BARKER, M.D., *On the Hygienic Management of Infants and Children.* London, 1859. pp. 120.

5. A. WERTHEIMBER, M.D., *Diätetik der Neugebornen und Säuglinge.* München, 1860. pp. 118. *(Dietetics of the Newly Born and the Nursling.)*

6. D. G. M. SCHREBER, M.D., *Aerztliche Zimmergymnastik oder Darstellung und Anwendung der unmittelbaren heilgymnastischen Bewegungen für beide Geschlechter, jedes Alter, und alle die verschiedenen speciellen Gebrauchszwecke.* Fünfte Auflage. Leipzig, 1858. pp. 103. *(Private Medicinal Gymnastics, Description and Use of the Uncomplicated Gymnastic Movements.)*

7. HEINRICH MAY, M.D., *Ueber die Ernährung der Neugebornen.* München, 1859. pp. 36. *(On the Nourishment of the Newborn.)*

We have already, in this Journal, explained our views as to the wholesome influence of popular essays on infantile hygiene and the usefulness thereof, and have at the same time, for several reasons, insisted upon members of the profession making themselves acquainted with as many of such productions as possible. It is the more necessary to peruse a number of them, as the professional man, when selecting at random for the use of mothers, would, in the majority of cases, be mistaken in his choice. For it must, unfortunately, be acknowledged that in no department of medical literature is there more carelessness exhibited and more negligence shown, than in preparing a book on such an important subject as infantile hygiene. We are used to consider the good, and sufficient, and popular explanation of medical and hygienic subjects for the use of the public, as a master-piece of a thoroughly educated professional man and a refined mind, but will certainly find, that whoever is inferior to the task of writing for the profession, will consider himself fully able to become a teacher of the public in general. The last years have produced a large number

of such productions, giving evidence of the good-will of the authors, but, we regret to add, in many instances of their inability to answer their intentions. France, particularly, appears to suffer most for the present from the prevailing epidemical ambition of enlightening maternal minds.

The contents of books on infantile hygiene are usually the same or nearly so. Thus we naturally require a new book of this description to be better than the preceding ones, or at least just as good, and always to represent the most advanced state of medical science. We can not say this of the works of Dr. Guiet and and Dr. Le Barillier. There is not much objectionable in them, because it is not so very difficult to fill a small volume with a number of commonplace remarks and prescriptions given twenty times before just as well or perhaps better. When they speak on their own authority they are not always right. We are not so sentimental as to agree with the lachrymose recommendation and the advise to mothers to nurse their infants themselves, as given by Dr. G. in every case, for there are many instances where practical experience will prove the preference of a mercenary wet-nurse to the mother; no more are we convinced that it will always be injurious to the mother to suppress the secretion of the breasts; on the contrary, we know that the milk of the mother will as often be injurious to the child as lactation to the mother. Finally, it will hardly do in a book destined for the public, to speak of milk-disease, the existence of which is greatly less than demonstrated to the profession, or to speak of diseases at all, as we do not consider the public able to diagnosticate or to cure infantile maladies. Such is, too, the main objection we have to Dr. L.'s book, who pretends to enlighten mothers on the diseases of infants and their treatment, in 125 pages. Such attempts will do much to lower in the public mind the scientific position of medical men, injure the health of children, and promote quackery of every kind.

M. Meier is not a medical man, but a pedagogue. His book is compiled from the Dutch book of Dr. Allebé, and the German works of Drs. Bock, Besser, Moleschott, Schmidt, etc. His diction is clear and simple, and the contents of the book are not encumbered by matters foreign to the subject, nor by unsettled medical questions. The occasional addition of some refined phrases does not detract from the value of the little volume, as it pretends to be written for mothers only.

Dr. Barker's book embraces the usual subjects. We consider it as one of the best essays we have met with for years. There is nothing uncommon in it, nothing new, but there is nothing false, nothing unscientific, even nothing objectionable, no point that we could not fully agree upon with the author. We have read it from the first sentence to the last, with undiminished pleasure, and can not but recommend it to the attention of professional men and the use of the public.

Dr. Wertheimber's book is of the same nature as the preceding.

We can but repeat the favorable opinion expressed of Dr. Barker's work. The expositions on the nutrition of the nursling by the breast-milk of the mother, on the wet-nurse, on artificial feeding, are remarkable for both their general intelligibility and their scientific character. The author urges the necessity of regular intervals in nursing, as the density of the milk increases the oftener the infant nurses. In his opinion the return of menstruation is no indication to weaning a child, as Vernois and Becquerel have proved the composition of the milk to be but little influenced by it; water and sugar diminishing in slight proportion, casein increasing; but nursing must be discontinued at the commencement of a new pregnancy. The time of weaning is not a fixed one. It ought to be done gradually, not at once; not before any teeth have made their appearance; not while teeth are cutting, but in the intervals between the appearance of the several groups of teeth, the cutting time of which is distinctly divided into certain periods; and not in the hottest months of summer. The average time of weaning will be the ninth or tenth month of the nursling; up to this time the solid elements of the milk are increasing, and will decrease afterward; thus the injury produced by protracted nursing is evident without further proof. As to the preference of the mother's milk to that of a wet-nurse, many reasons have been given and are alluded to by the author; by him the principal stress is laid on the equality of the constitution of both mother and infant, the nursing being but the continuation of the intra-uterine nutrition. The author's remarks on artificial feeding are so particularly interesting, that we regret very much to have space for but few extracts, part of which are not at all unknown, but are worthy of being repeated. The milk taken from cows in the morning is preferable to that taken in the evening, as it contains less casein. The milk drawn off first is preferable to that coming last, for the same reasons, its solid elements being less copious. Infants must not be fed from a spoon, but must be made to suck their food, as the physiological investigations of Spallanzani, Brown-Sequard, and others, have sufficiently proved the gastric juice to be excreted by the action of sucking. There is no substance more apt to promote the growth or to repair the waste of the animal body than milk; thus milk can not, by any means, be rendered more nutritious by any addition; nevertheless, some addition may be required sometimes, either to increase the digestibility of milk or to counteract some obnoxious effects when the milk administered is of bad quality. Thus amylaceous matter is often mixed with milk, although the infantile stomach is unable to transform amylum into dextrine and sugar. But the casein of cow's milk coagulating into a more solid and copious mass than woman's milk, the admixture of amylaceous matter imbedded, as it were, between the particles of coagulating casein facilitates its digestion.

Dr. Schreber's book is not, in a proper sense, a work on infant-

ile pathology or dietetics only, the physiological remarks and the therapeutical prescriptions of the author being equally important for every age and sex. He points out the inharmonious development of the human body as the only cause of all the sickliness and the majority of diseases mankind is subject to, and arrives at the conclusion that, in fulfilling the main characteristic of life, that is to say, to keep up a rapid renovation of the body by excretion and assimilation, the physical half is more active than the mental half. Troubles in the metamorphosis of the elements of the body giving rise to diseases or death, are brought on particularly by insufficiency of excretion in general, and the muscular system being the most voluminous in the organism, by inactivity and deficient metamorphosis of the muscular substance in particular. It is but natural that the activity of the muscles and their increased metamorphosis should have a mighty influence on the quality, composition, and physiological action of the blood. This, however, being the common mother of all the elements and systems of the organism, and the muscles, moreover, exercising a general influence on respiraton and circulation, the author says by no means too much, in asserting that many diseases may be prevented and many cured, by methodical gymnastic exercise; thus proving by facts that the same remedy may have a wholesome effect as both a remedy and preventive. Methodical exercise of the muscles is recommended by Dr. S. in many diseases of the abdominal organs and of the nervous and osseous systems. Now all this is not new in its principle, but our author has the merit of explaining, by forty-five drawings and descriptions of their meaning, how systematic muscular exercise may be resorted to without much loss of time, without any inconvenience to any one, though he be busy, without the necessity of leaving home and applying to special institutions, and in any temperature and season; thus showing a direct way to either recovering lost health or preventing disease. Physical education of children will but gain by the author's prescriptions, which are suited to further a thoroughly harmonious development of the infantile organism, and may be commenced with as early as at four or five years of age.

Dr. May's conclusions, arrived at from his inquiries and experiments, are the following:

1. The nature and development of the digestive organs of a living organism corresponds with the food destined by nature.

2. The digestive organs of the newly born are not fully developed; the absence of teeth, the structure and position of the stomach, the deficient development of its muscular layer and its secretory apparatus, point to such kind of food as requires neither great chemical nor mechanical powers of assimilation.

3. This food is the mother's milk, as it comes next to chyle.

4. The function of the stomach, like that of the lungs, commences after birth only; in either, the atmosphere appears to be the efficient cause.

5. The fermentative power, as produced in the mucous membrane of the stomach, by the influence of the atmosphere, appears to suffice for the digestion of breast-milk.

6. The coagulations of casein are dissolved, in great part, by lactic acid formed from the sugar contained in breast-milk.

7. Fat is not, in a proper sense, digested; but, being in very small globules, it is easily and rapidly resorbed. At least it is not improbable that part of the fat globules contained in the milk are readily resorbed and transmitted into the chyle in their original nature.

8. Milk, taken from the breast, exposed to air and a lower temperature, undergoes rapid alterations, which, however, are not entirely understood. Its digestibility by the infantile stomach is greatly diminished thereby.

8. Dr. C. G. G. Nittinger, *Das schwarze Buch vom Impfen. Zeugnisse und Thatsachen. Die Impfzeit und die Protestanten gegen Jenner's Gift und Zauber.* Leipzig, 1859. pp. 133. *(The Black Book of Vaccination. Testimonials and Facts. The Period of Vaccination, and those Protesting against Jenner's Poison and Witchcraft.)*

The worthy author of this book has the remarkable power of creating a book out of nothing, and his fecundity is truly astonishing, as he gives birth to a new volume every year. He had already written on the following subjects: *Vaccinating Poison, Scientiam Profanasti, Terram Perdidisti, Populum Occidisti;* on *The Poisoning, through Fifty Years, of the People of Wurtemberg by Vaccination;* on *The False Dogma on Vaccination, and its effect on Science and Society;* and other works could be mentioned, with equally ingenious titles. The author desires to be known, the world over, as one of the enemies of vaccination. We hope to deserve the author's thanks for adding to his notoriety, and our readers' thanks for warning them against ever reading a book destitute of either facts or truths, but full of sentimentalities and absurdities of every description.

9. George Hull, M.D.—*Scarlatina and Diphtheria; with their Treatment and Remedy.* London, 1859. 19 pp.

Dr. Hull recommends the sesqui-carbonate of ammonia as a specific in scarlatina, diphtheria, *et id genus omne;* all of which diseases he considers as equal in their nature, and depending on malarious influences. In scarlet fever this remedy not only cures the disease, but facilitates diagnosis; "when there is reason to suspect that the patient is suffering under this disease, but that the eruption is from some cause suppressed, a few doses of the ammonia will very speedily demonstrate whether it is scarlatina or not." The remedy is given every two, three, or four hours, in doses varying from two grains for an infant of twelve months, to ten grains for an adult. In order to explain the nature of scarlet

fever, he simply asserts that "it is a disease of debility." Diphtheria "is only a modification of the most severe and dangerous form of scarlatina, without the eruption." The treatment is the same as in scarlatina, with which it is identical. The author declares membranes to be exuded in neglected and very bad cases only; which is a strange mistake as to the nature of the disease. Beside the administration of the all-saving sesqui-carbonate of ammonia, the tonsils and fauces should be carefully mopped over with a strong solution of nitrate of silver, several times a day, and the outside of the neck and throat well rubbed with a strong embrocation, composed of ammonia, camphor, and opium; an embrocation of this kind, properly labeled, should be kept in all houses where there are children. The author speaks of chlorate of lime and of zinc as disinfectants; we suppose the chlorids were meant.

10. P. F. Semanas, M.D.—*Traité des Frictions Quiniques chez les Enfants.* Paris et Lyon, 1859. pp. 223. (*Treatise on Frictions with Quinia in Diseases of Children).*

Dr. Semanas objects to quinia, on acconnt of the symptoms of intoxication, as they are called; in the disagreeable taste of the remedy; and sometimes in its insufficient digestibility. He therefore administers quinia externally, asserting that he arrives at the same medicinal result as with its internal administration. He is of the opinion that only a part of the medicine is required for the benefit of the system; that, whenever quinia is brought in contact with a mucous membrane, not only the desired effect is produced, but the cerebral symptoms, etc., also; and that, in all such cases, special organs are required to quickly remove the unnecessary medicinal agent from the organism. The urinary bladder stands foremost as an excretory organ. The author thinks it but reasonable to assume that the portion of a medicament perceived in the bladder immediately after its admission to the stomach, is certainly, to say the least, not required for a cure. He further declares the epidermis to be both the protector and the regulator of the cutaneous functions, absorption not excepted. The epidermis, in his opinion, will admit just as much of the medicinal agent as is required for a cure, but no more; so that nothing will be found in the urine, etc. Thus, from the fact that he finds no sign of quinia in the urine, after having rubbed it into (or on) the skin, our author concludes that the epidermis admitted just enough, and nothing too much. To him, the absence of quinia in the urine, and the absence of cerebral symptoms, is no proof that the epidermis is not an absorbing organ. The thirty observations, published at length, are of intermittent, remittent, catarrhal, and typhoid fevers; of bronchitis, pneumonia, etc. In all these cases he applied his embrocations of quinia, but there is scarcely one of them in which other remedies, and powerful ones, too, were not administered at the same time.

H. Carl Gerhardt, *Der Kehlkopfscroup.* Tubingen. 1859. pp. 88. (*On Laryngeal Croup*).

Dr. Gerhardt's book on laryngeal croup is one of the last, and, in our opinion, the very best and most scientific treatise on the subject in existence; we regret very much to be confined to a very few extracts, as the book is written in such a condensed style, and sometimes even fragmentary manner, that nothing but a translation in full would suffice to do justice to its valuable contents. After some remarks on the history of the disease and its literature, the first chapter contains the author's views on the etiology of croup. Its endemical character is proved by the larger number of cases occurring in densely populated cities, and in the same neighborhood, in subsequent years, both on sea-shores and in the interior, under certain influences of weather or season. The colder seasons appear to be most favorable to the existence of croup, but it is observed no less in hot climates than in temperate and cold ones. We are in possession of reports on the not infrequent occurrence of croup in the Southern States, Egypt, Cape of Good Hope, British India, and the West Indies. The endemical character is further proved by its annual occurrence on a certain Swedish flat land of about forty square miles, on which scarcely twenty-five per cent of all the children of from one to eight years of age are not affected with croup (*Magnus Huss*). Croup is a disease of the infantile age to a greater extent than any other; the largest number of cases occurring between the first and seventh year, the next larger between the eighth and fourteenth. Within the first year croup is seldom observed; among one hundred post-mortem examinations on children under one year made by the author, there was one of croup. Cases occurring after the fourteenth year of life are but exceptional. Males are more subject than females. The question of contagiousness is not decided upon, as the opinions of authors are contradictory; the number of cases by which it is shown to exist is not very numerous; if croup is contagious in some instances, it certainly requires in the majority of cases other modes of propagation. Its miasmatic origin can not be doubted; it is mostly found in large cities and among the poor (West, Guersant); Guersant observed croup to occur the more rarely in his hospital the more he diminished the number of beds. Whether direct exhalations from the soil, ascending gradually by inches into the air (Nola), have any influence is more than doubtful; no more is it probable that there is a connection between croup and the undeveloped condition of the genitals (Cheyne, Emmerich), as the first year of life shows a greater immunity than later periods up to the fourteenth year. But epidemical influences certainly exist; for very frequently croup coexists with, or succeeds, catarrhal and anginose diseases, and whooping cough. Sometimes croup is complicated with acute exanthems (West's secondary croup). Rilliet and Barthez assert children affected with croup

to be rarely healthy throughout, whereas croup is frequent in families with hereditary tubercular disposition. Of twelve patients examined by the author, eight exhibited in the post-mortem examination tuberculosis of the bronchial glands, and two miliary tuberculosis. Croup belongs to the class of diseases invading but once the same individual, like typhus and acute exanthems; this is a general rule in spite of some few exceptions; thus Guersant had to perform tracheotomy twice on the very same individual.

The characteristic peculiar to this disease is the formation on the mucous membrane of the larynx, of fibrinous pseudo-membranes, which are either soft, or hard, and tough, and may reach the thickness of a quarter of an inch. They usually cover but the lateral margins of the larynx, the inferior surface of the epiglottis and some single spots of the fauces, but sometimes the uvula and the posterior wall of the pharynx, etc., also. They very rarely occur on the mucous membrane of the mouth and on the excoriations of the skin; Charrier has found the same process in the naso-lachrymal duct, in the external ear, and on the conjunctiva. The lungs of patients who died from croup were either pneumonic or atelectatic, or emphysematous. The bronchi frequently contain croupous membranes. As to symptomatology, Dr. G. distinguishes four different classes of symptoms beside the prodromal stage, which may be considered as a more or less acute catarrh of the laryngeal mucous membrane. These four classes of different symptoms are: 1. Those of acute obstruction of the larynx. 2. Those of croupous inflammation. 3. Those of asphyxia. 4. Those of complications. Among the least important symptoms are the sounds of voice and cough, and the number of respirations, as simple laryngeal catarrh, etc., may exhibit the like alterations. Nor is there any thing characteristic of croup in the feverish symptoms, with this exception, that the fever in acute catarrh of the larynx is highest in the commencement of the disease, and will decrease rapidly, while the fever in the first stage of croup will be inconsiderable in the beginning, increase gradually, and remain about equal in several subsequent stages of the disease. The symptoms of asphyxia are smallness and irregularity of the pulse, and its intermission during inspiration, paleness, and lividity of the face, hyperæmia of the superficial veins, and apathy following the restlessness of the preceding stages. Most characteristic of croup, and necessary for a positive diagnosis are the following symptoms: the peculiar laryngeal sounds; the barking cough; aphonia; with each inspiratory action, the inward drawing of the xiphoid process, of the lower costal cartilages, of the clavicular fossæ, and of the intercostal interstices; the presence of pseudo-membranes either in the fauces or in the sputa. The diagnosis will further be supported by the length of time required by the subsequence of symptoms, at least thirty-six hours. The distinction between several varieties of croup, whether

secondary or primary, endemic or sporadic, is of less importance than the severity and duration of each case.

From two thirds to five sixths of the cases will terminate fatally; all of them will, according to Wilson, unless taken care of. Death ensues either from asphyxia, or from sudden emergencies like hemorrhage, obstruction of the bronchi, convulsions, ruptures in the respiratory organs, pneumonia, etc. Recovery is slow in the majority of cases, and frequently incomplete, inasmuch as catarrh of the larynx, and some deficiency in the action of the vocal chords, will sometimes remain. Thus prognosis is unfavorable, most so in epidemics, in children of a year and a little over, and in such as have been suffering before. As a general rule, patients with a pulse of more than 140 on the first day of croup, will die on the third. Cases in which pseudo-membranes have been brought up are not past danger, as membranes are apt to be exuded repeatedly and suddenly, and effect suffocation.

Therapeutics have proved most successful when confined to the locality of the disease. There are four indications in Dr. G.'s opinion:

1. To avoid laryngeal stenosis as much as possible by removing either laryngeal catarrh (emetics, sometimes combined with irritants), or spasm of the laryngeal muscles (warm baths, small doses of opium, inhalations of chloroform), or paralysis of the laryngeal muscles (volatile alkalies, camphor, musk), or the intumescence of the mucous membrane (local blood-letting). 2. To remove the stenosis when present (emetics, sometimes drastics, cauterization with nitrate of silver, according to Bretonneau and Horace Green). 3. To give an artificial entrance to the air into the respiratory organs below the stenosis (tracheotomy). 4. To remove the injury done to circulation and nervous functions (counter-irritants, internal stimulants).

Tracheotomy was performed for the first time by Asklepiades, for angina, threatening suffocation; afterward by Antillus and Paulus Aeginetes. It was nearly forgotten by the Greek, and entirely neglected by the Arabian physicians, who dreaded much the wounds of the trachea, until Fabricius ab Aquapendente and Casserius again introduced it into practice. The first vertical incision through the cartilages of the trachea was made by Junker. The operation was first recommended for croup by Home, 1765, Heister, 1763, Louis, Van Swieten, Veiq d'Azyr, and Burserius; and first performed, for this disease, by a London surgeon, John Andree, in 1782. In the commencement of this century, in the Napoleonic *concours*, Caron recommended tracheotomy in croup; but Jurine and others rejecting it, it was rejected until, in 1824–26, Bretonneau introduced it into practice, and defended it with such success that Dupuytren, Scoutetten, Velpeau, Roux, and Trousseau in France, and Roser, Baum, Passavant, Bardeleben, Volkmann, and others, in Germany, were not only convinced of its being theoretically justifiable, but per-

formed it repeatedly, and more or less successfully. Before 1824 no case of tracheotomy proved successful; but recoveries were not very rare between 1825 and 1849, after large-size canulas were applied. Nevertheless, forty operations in the Children's Hospital of Paris, and twenty-three operations of Guersant's, proved unsuccessful; of one hundred and forty-six patients on whom Trousseau performed tracheotomy, he saved twenty-five per cent.; Gerdy four of six patients. After the double canula of larger size was introduced into practice by Trousseau, and the after-treatment was more taken care of, success became more frequent. Among four hundred and sixty-six cases of the Children's Hospital of Paris, there were one hundred and twenty-six recoveries; in the Hospital of St. Eugenie, seventeen among ninety-nine; and in the private practice of Guersant, ten among eighty-two; of Trousseau (1850–55) twenty-cases among forty-two; and of Archembault, six among twelve. Similar results were obtained in Germany and in England: Fuller saved three out of seven; Spence three out of five. In all these cases the operation was not performed before the patients were in the last stage of croup; thus it can not well be doubted that the results will be even more fortunate as soon as the now prevalent prejudice against tracheotomy will have disappeared. Bouchat's *tubage* Dr. G. refutes by means of the well-known objections made by Trousseau.

The Transactions of the American Medical Association, instituted 1847. Vol. xii. Philadelphia: 1859. pp. 722.

The present volume of the Transactions presents a striking contrast with its immediate predecessor, not only in size but in the character of its contents. The number of reports and papers presented at the last meeting of the Association, was very limited. While the volume of last year contained nineteen reports and papers, the present volume contains but six. This failure of committees to report upon special subjects was undoubtedly due to accidental causes, and is not to be taken as a criterion of the degree of interest felt in their several subjects. Of the papers in this volume we shall speak but briefly.

The *Address* of the President, Dr. Harvey Lindsly, is a well-written production, embracing a brief review of the progress of medicine, and setting forth its claims to the consideration of the public.

Report of the Special Committee on Government Meteorological Reports, by Richard H. Coolidge, M.D.—We have several times called the attention of our readers to the fact that the Smithsonian Institution was engaged in an extended system of meteorological observations throughout the States and Territories, and recommended that the American Medical Association should co-operate in this most important work. We are gratified to notice that Dr. Coolidge, the enlightened and laborious

assistant in the Medical Department at Washington, has brought this subject to the attention of the Association, in a report which proves the entire practicability of this co-operation, and suggests the method by which it may be accomplished. He states that the committee have conferred with Professor Henry, and the following plan is the result of their conferences with him: "Let each county medical society create the office of registrar, and appoint thereto a physician or medical student resident in the county-town, whose duties shall be to keep a meteorological and medical register in the form and manner described, and to correspond with the members of the society respecting all those agencies which may have an influence upon sickness and mortality in the county; such as its climatology, medical topography, prevalent diseases, water, diet, clothing, houses, occupations and habits of the inhabitants." Precise rules are then given, with all the necessary details. We earnestly recommend this subject to the attention of county societies, and would urge them to adopt these suggestions without delay. If this system was carried out fully, we should soon have a meteorological survey of the entire territory of the United States, of incalculable advantage in the study of our epidemic and endemic diseases.

Report on Criminal Abortions.—This report is but the outline of a series of papers in the *North American Medico-Chirurgical Review.* These have recently been issued in a pamphlet form, and we shall defer a further notice of the subject to another occasion.

Report on the Medical Topography and Epidemics of California, by Thomas M. Logan, M.D., of Sacramento.—The physicians of California have shown a commendable zeal in the investigation of the climatic conditions and topographical peculiarities of that new and flourishing State. The pages of this Journal have been enriched by the elaborate and able articles of Dr. Hatch, of Sacramento, upon the climate and diseases of the Sacramento Valley.

The author of this report very justly remarks that a knowledge of the etiology of diseases, is best obtained by studying the affections of different localities in connection with every condition and circumstance calculated to operate prejudiciously or otherwise, upon the health of the inhabitants. This course of investigation leads to the study of the meteorology, geology, etc., of the region in question. In regard to the *meteorology* of California, Dr. Logan remarks, "considered in a general manner, we would pronounce the climate Asiatic;" this is especially true of the great reduction of temperature after the maximum is reached, for however excessive the heat is at midday, there is a corresponding diminution at night. This diurnal range of temperature is a characteristic feature not only of all the great valley regions and plains of that State, but equally of all the Pacific and interior territories, irrespective of altitude. Appended to the report are meteorological tables for the year 1858, and averages for the three preceding years.

Dr. Logan attributes much of the present unhealthiness of certain localities, especially the prevalence of fevers, to the change of water-courses in mining, and he cites numerous examples to prove the correctness of this opinion.

The report proceeds in a somewhat discursive manner to consider the topographical peculiarities of California, and their influence in the causation of fevers, and concludes with a discussion of the different methods of treatment. The author advocates the cautious use of quinine, and places much stress upon the indications for the use of iron.

Report on a Uniform Place for Registration, Reports of Births, Marriages, and Deaths. By W. L. Sutton, M.D., Ky.—The object of this report, is to introduce a form of registration report, to be adopted by all the States. The difficulties which the committee have endeavored to overcome may be briefly stated.

Births.—They advise that still-births be registered as to sex, n. with births, and then separated ; a table is given for the separation of whites from colored ; free blacks are to be classed with the slaves.

Marriages.—The tables used in the Massachusetts reports are recommended.

Deaths.—The committee also recommend the tables used by Massachusetts, but advise in the distinction of race to be reported upon as well as that of sex.

The committee proceeded, at considerable length, to point out the difficulty of forming a nomenclature of the causes of death to be used in registration reports, by proposing certain changes in the classification of particular diseases. Appended to the report are the plans of registration, as modified by the committee ; a supplementary report in which the committee conclude that they can not frame *one* law adapted to all the States, and finally a copy of the Registration Laws of Rhode Island and South Carolina.

Report on the Topography and Epidemic Diseases of Michigan. By J. H. Beech, M.D.—This report contains an interesting survey of the peninsular State, as regards its epidemic diseases. The circular which was issued by the author soliciting information from physicians in different parts of the States, seems not to have been very generally responded to, but of the communications received some contain facts of much interest. We gather from them, that typhoid and typhus fever, erysipelas, and dysentery are the prevalent diseases of Michigan, but they do not exist in a very severe form.

The last paper is entitled, *Observations on some of the Physical, Chemical, Physiological, and Pathological Phenomena of Malarial Fevers*, by Joseph Jones, A.M., M.D., Prof. of Medical Chemistry in the Medical College of Georgia, Augusta.—This report occupies two thirds of the reading matter of the volume, and is a treatise in itself. We shall reserve an examination of this production to another occasion.

The Causation and Prevention of Disease. By JOHN PARKIN, M.D., Late Medical Inspector for Cholera in the West Indies. London: John Churchill. 1859. pp. 191.

FOR twenty years England has been agitated with the pressing subject of sanitary reform. The high death-rate of her laboring classes aroused Government to the necessity of investigating this frightful mortality of her producing population, and commissions composed of the most scientific and responsible men, were delegated to traverse the realm and thoroughly explore the secret causes of death, as a basis for future legislation. England underwent a complete sanitary survey, and the result is exhibited in the *Report of the Health of Town Commission.* The reports of these several commissions agree in attributing the great mortality among the poor to excessive crowding in ill-ventilated houses, defective house and land drainage, deficient supply of pure water, improper food, and the deleterious influences of the various trades. The British Government correctly appreciated the magnitude of the evil which threatened her productive classes, and resolutely set to work to apply the remedy. Thus was laid the firm and enduring foundation of the admirable system of sanitary surveillance, which has so markedly reduced the death-rate of England, and improved the morals as well as health of her poorer classes by giving them better homes. This work has cost her millions of treasure, and still she pushes forward her reforms and improvements with unabated zeal, more lavish than ever of her gold. Her last enterprise, the drainage of the Thames, at an expense of £12,000,000, proves how thoroughly she is enlisted in the great work of sanitary reform, and how thoroughly she understands the maxim, "a nation's health is a nation's wealth."

But a new expositor of sanitary science has arisen who would teach the British Government that all her labors are vain and misdirected, and that this apparent improvement in the health of the people instead of being due to improvement in tenement houses, the removal of underground population to open air and sunlight, thorough drainage and water supply, is rather due to an increase of the carbonic acid gas from the crowding of people into cities and towns. In a word, Dr. Parkin holds "that the presence of carbonic acid in the air is beneficial, and that when in sufficient quantity, it acts by destroying or neutralizing the elements productive of disease—no matter by what name they may be called, malaria, or any other." "True," he adds, "the amount of direct evidence is not great; but then the indirect facts are, perhaps, of more value in such an inquiry than the direct ones." We have read his work with care, and can verify his latter statement; the direct evidence is sadly deficient, and the indirect facts are readily made to subserve the author's theory, as they would almost any other. It seems preposterous that a medical man who has had any experience in epidemic visitations of diseases should not

heartily adopt as of vital interest to every community the following aphorism of Mr. Simon, of London: "For the permanent avoidance of epidemic diseases, *cleanliness is the sole safeguard.*" But to this most judicious maxim Dr. Parkin opposes the following remarkable statement, shrewdly premising, however, that if his own conclusions are correct: "It must be evident that the removal of filth and decomposing matter, whether existing on the surface, in drains, or in cess-pools, will have no influence in the prevention of disease." (p. 117.)

We can assure the author, if he will visit our city (where the authorities not only entertain his views in regard to the innocuousness of "filth and decomposing matter," and the beneficial effects of carbonic acid upon the health of the poor, and in which the annual mortality has reached the gratifying ratio of one in thirty-six of the entire population) he can obtain volumes of direct evidence as to the influence of his favorite agent upon the public health.

In taking leave of this work we must express our gratification that from certain intimations of the author, it is evident his theory of sanitary reform is lightly entertained by the English authorities, and that they have even declined to publish one of his official reports.

Proceedings of the American Pharmaceutical Association at the Eighth Annual Meeting, held in Boston, Mass., September, 1859, with the Constitution and Roll of Members. Boston: 1859. pp. 416.

The Proceedings of the American Pharmaceutical Association is an annual volume of great practical importance to the physician. Side by side with the Transactions of the American Medical Association, this work should have a place in his library. In no other way can he possibly expend one dollar to greater advantage.

The last annual meeting was held at Boston, Sept. 13, 1859, at which fifty-five members were present. The report of the executive committee exhibited a flourishing condition of the Association as regards its finances, while the number of reports upon subjects referred to special committees at the preceding meeting showed a most commendable interest of its members in matters pertaining to pharmacy.

Passing over the minutes of the last meeting the volume contains,

1. *Reports of Committees.*—These reports are upon the following subjects: 1. *On the Progress of Pharmacy,* which embraces a critical review of the improvements in pharmacy during the year, a notice of pharmaceutical association, pharmaceutical literature, and the drug market and manufacturers. 2. *On Weights and Measures.*—This report is very lengthy, and is devoted to a

review of the different systems in use, and suggests the improvement which ought to be adopted by Government. 3. *On the Revision of the Pharmacopœia.*—This report briefly points out the defects in the present pharmacopœia for the consideration of the Pharmacopœial Convention which is soon to meet. 4. *On Home Adulterations.*—The facts brought forward in this report are of great interest to the physicians, as it notices of the various drugs which are adulterated, and the substances employed for that purpose.

2. *Special Reports.*—There are fourteen reports in this division, some of which will prove highly instructive to the practitioner.

3. *Volunteer Reports on Scientific Subjects and Essays.*—This portion of the work contains nine essays on special subjects.

Clinical Lectures on the Principles and Practice of Medicine. By John Hughes Bennett, M.D., F.R.S.E., Professor of the Institute of Medicine, etc. From the last Edinburgh Edition, with five hundred Illustrations on Wood. New York: Samuel S. & William Wood, 1860, pp. 942.

We take great pleasure in announcing the issue of a new edition of this most excellent work from the press of Messrs. Wood, of this city. In the beauty and accuracy of its illustrations, and in its typographical execution, this edition equals the original Edinburgh edition, while in other respects, as to size and convenience of the page, the compact form and binding, it excels. We regard the mechanical execution of the work as decidedly the most unexceptionable of any reprint ever offered to the medical public of this country. It is doubtful, indeed, if there has issued from the literary press of this city, during the last year, a better specimen of typography and engraving. This edition has been carefully revised and extended by the addition of fifty pages, with twenty-one new cases, and thirty-four new wood-cuts.

Of the merits of this work we have already spoken, but we can not let the opportunity pass which the issue of a new edition presents, without again calling the attention of our readers to its importance. Two things are essential to render a work on clinical medicine practicably useful, in addition to a correct and judicious discussion of principles, viz., illustrative cases accurately reported and in detail, and correct illustrations of microscopical and pathological appearances. Prof. Bennett, from long experience as a teacher, has come to a full appreciation of this fact, and his amply and accurately illustrated volume proves his determination to supply these defects.

This is one of those works which we do not hesitate to *urge* practitioners to obtain, for, as a treatise on clinical medicine, it will stand unrivaled while its laborious author lives to improve its successive editions.

Introductory Discourse to the Several Courses of Clinical Instruction at Bellevue Hospital, New York, delivered on the 18th of October, 1858. By JOHN W. FRANCIS, M.D., LL.D., President of the Medical Board. 8vo. pp. 55. New York, 1858.

Reminiscences of Samuel Latham Mitchill, M.D., LL.D. By JOHN W. FRANCIS, M.D., etc. [Enlarged from Valentine's City Manual.] 8vo. pp. 31. New York, 1859.

SELDOM have we spent an hour more pleasantly than in the perusal of these pamphlets, nor seldom has their learned and distinguished author succeeded in treating the medical public in so entertaining a manner. By these labors he has placed the student of medical history under many and lasting obligations, and has augmented his own reputation as an entertaining historian and biographer of the medical profession in America. And while we express our approval of the like efforts in this department of medicine, we regret that our limited space forbids our making selections from these papers.

We can not refrain, however, from recording a few additional facts relating to Dr. Samuel Clossey, our first Professor of Anatomy, mentioned on page thirty-one of the first pamphlet. It was from 1752 to 1756 that Dr. Clossey conducted a series of dissections on morbid bodies at St. George's Hospital, London, and Sephen's Hospital, Dublin, which formed the basis of his remarkable treatise entitled *Observations on some of the Diseases of the Parts of the Human Body, chiefly taken from the Dissection of Morbid Bodies.* 8vo., London, 1763. In 1763 he emigrated to America, and settled in the city of New York; and in the month of November of that year, having hired a store-house for the purpose, he commenced a course of lectures on anatomy and pathology, accompanied by dissections on the cadaver. This course comprised forty-four evening lectures which were fully illustrated by demonstrations in healthy and diseased anatomy, and it was only cut short by the fact that but two subjects (one a negro) could be procured for his use.

CORRESPONDENCE.

Case of Diphtheria with Autopsy. By FREDERIC D. LENTE, M.D.,

Cold Spring, February 13, 1860.

Thomas G., aged 7 years, a child of rather delicate constitution, was attacked on the sixth inst., according to his mother's statement, with "soreness of the throat;" soon after, he commenced vomiting, and continued at intervals until this morning, the 8th; she also states that he has had fever for forty-eight hours; but his skin is now cool and pleasant, tongue coated with a white fur; he complains of slightly painful deglutition; has no cough and does not seem to be in any particular distress; pulse rather

feeble, but slightly accelerated; respiration quiet. There is some tumefaction over the left tonsil externally. Upon inspecting the fauces, the tonsils are observed to be moderately swollen and coated with a thick, dead white, false membrane, its edges being apparently detached at some points from the mucous membrane. The uvula and pharynx are red, and the former much swollen. Upon attempting to seize the membrane and detach it, it breaks readily. Physical exploration of the chest reveals nothing abnormal.

Treatment.—Touched the parts affected with commercial muriatic acid, which, as in other cases, gave but moderate temporary pain. To take hydr. sub. mur. gr. v., to be followed by ol. ricini ℥iij. and to have potass. chlorat. gr. x. q. 4 h. Also to apply a thick compress net with water about the throat and cover with oil silk. Beef-tea and other nourishment *ad libitum.*

Feb. 9.—This morning Dr. Richerson saw the case, and observed only small patches of membrane instead of the uniform coating. He applied the acid again; the exudation now looks thinner and darker; the medicine has acted well; general condition about the same; respiration good; takes his nourishment well. Urinary secretion not deficient.

Feb. 10.—About the same; was restless last night and did not sleep. The membrane has now spread over the tonsils again and fringes the soft palate; it is perfectly white. Respiration slightly croupy and voice hoarse. Continue treatment.

Feb. 11.—Slept well with an anodyne. This afternoon, the membrane appeared looser, and Dr. Richerson, who saw the case at that time, detached it easily by means of a swab, it came off in large patches and was tough and elastic. There appeared to be considerable obstruction behind the velum, but no nasal discharge.

Feb. 12.—Last night, at bedtime, there did not appear to be any marked change in the general condition of the patient, but a good deal of laryngeal obstruction, and croupy cough, and two full doses of hydr. sub. mur. were given at an interval of four hours, which had been found to produce great relief in similar cases; the case, however, continued to assume a more threatening aspect, and terminated in death at noon to-day. The fatal result being apparently due mainly to laryngeal obstruction. But there was not that distressing dyspnœa which characterizes the death struggles in membranous croup.

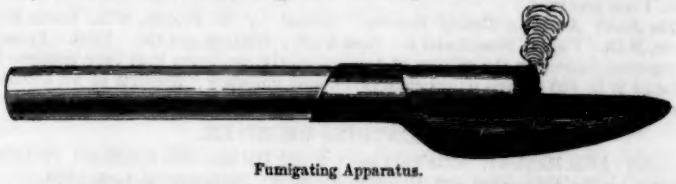
Autopsy eighteen hours after death. The trachea was cut across just above the sternum, and removed together with the larynx, pharynx, soft palate, tonsils, etc., for future examination. Upon removing the lungs, which were fully distended with air, and slitting up the bronchi and their ramifications, the false membrane was found to have extended as far as the third division in the right lung, and to the secondary division in the left; furnishing a uniform coating of a translucent appearance, and with but little tenacity;

the mucous membrane of all the larger tubes was intensely infected ; upon compressing the lung tissue, a creamy fluid, not frothy, exuded from all the tubes, large and small.

Upon examining the parts removed in the first instance, the mucous membrane of the palate and pharynx was seen to have a marked livid aspect. The palate, tonsils, upper part of pharynx, etc., were covered with a yellowish-white false membrane of considerable thickness and tenacity, but these characters belonged especially to that lining the posterior aspect of the velum and adjacent parts, from which it could be stripped off in large, thick, tenacious patches. Here it had not been interfered with by the causti applications. The epiglottis was thickened, and this, with the whole lining of the larynx and trachea, was intensely reddened, and coated with false membrane ; that investing the larynx being patchy and tough, while that in the trachea was more uniform, of a creamy appearance, and softer, but still possessing sufficient tenacity to allow of its being stripped off with the forceps.

New Apparatus for Fumigation.—A novel and peculiar method of applying the vapors of medicinal agents to the mucous membrane of the air passages, was recently brought before the Academy of Medicine, by Prof. Mathews, of this city.

The medicinal agents employed are very various, to suit the case in hand, and the views of the prescribing physician, viz., balsams, resins, camphor, tar, etc. ; opiates, narcotics, etc. The medicinal substance or substances are mixed with an inert vegetable powder, which is combustible, and is burned in a compound tube, of which the following is a description :



Fumigating Apparatus.

A slender tube, of any desirable length, is first formed of very delicate paper, which, being closed at the bottom, holds the powder to be burned as in a sack. This tube is then introduced, with its contents into a second tube, of such size as will just receive it, leaving space between the two tubes barely sufficient for the passage of the vapors. The outer tube has a stiff paper tube, two inches long, in one end, which serves as a mouth-piece and handle. The tubes being thus adjusted to each other, the outer extremities are twisted up together, the point is ignited, and the vapor is inhaled as it passes out at the other end. The inner end, if desired, can be passed back so as to come very near the larynx ; or it may be inserted in the nostril, if the case require.

The New York Pathological Society has issued a prospectus for a volume of Transactions of 400 pages Terms, $2.00 to subscribers; $2 50 to non-subscribers; payable on delivery of the volume. Subscribers can send their names to Messrs. Bailliere.

Appointments of Delegates to the Convention for Revising the Pharmacopœia (to meet in Washington on the first Wednesday of May next). From the Massachusetts College of Pharmacy, Messrs. Theodore Metcalf and Charles T. Carney; from the New York Academy of Medicine, B. W. McCready, M.D., E. H. Davis, M.D., and E. R. Squibb, M.D.; from the College of Physicians of Philadelphia, Geo. B. Wood, M.D., R. P. Thomas, M.D., and Robert Bridges, M.D.; from the University of Pennsylvania, Jos. Carson, M.D.; R. E. Rodgers, M.D., and Jos. Leidy, M.D.; from the Jefferson Medical College of Philadelphia, Franklin Bache, M.D. and T. D. Mitchell, M.D.; from the Philadelphia College of Pharmacy, Messrs. Wm. Procter, Jr., Edward Parrish, and Alfred B. Taylor; and from the Medical Society of the State of North Carolina, Wm. Geo. Thomas, M.D., Peter E. Hines, M.D., and Edward Warren, M.D. From the *Medical Society of the State of New York*, Drs. E. R. Squibb, Howard Townsend, and Caleb Green; from the *College of Pharmacy of the city of New York*, Messrs. Wm. Hegeman, Alex. Cushman, and John Meakim; from the *Faculty of Physic of the University of Maryland*, Professors Samuel Chess, Charles Frick, and Wm. E. A. Aikin; and from the *Cincinnati College of Pharmacy*, Messrs. E. L. Wagner, W. S. Merrill, and W. J. M. Gordon.

In the Seventh Annual Report of the Surgeons of the N. Y. Ophthalmic Hospital, Drs. Stephenson and Garrish, the attending Surgeons, report ten hundred and ten patients during the past year. Their ophthalmic school is reported to be in a flourishing condition, a large class of medical pupils and practitioners being in attendance during the present session.

New Medical Journals.—The following have been received:

The British American Journal. Edited by Archibald Hall, M.D. Monthly, pp. 48. Subscription $3.00 per annum. Vol. I., Nos. 1 and 2. Montreal: 1860.

The Kansas City Medical and Surgical Review. Edited and published by G. M. B. Maughs, M.D., and T. S. Case, M.D. Bimonthly, pp. 48. Subscription $2.00 per annum. Vol. I., No. 1. Kansas City Mo.: 1860.

The Chicago Medical Examiner. Edited by N. S. Davis, M.D., and E. A. Steele, M.D. Monthly, pp. 64. Subscription $2.00. Vol. I., No. 2. Chicago: 1860. (No. 1 not received.)

The North American Medical Reporter. Edited by W. Elmer, M.D., Louis Elsberg, M.D. Vol. I., Nos. 3 and 4. New York: Willard and Co. 1859. From a prospectus issued by the editors of this quarterly, we learn that they propose to enlarge it to 400 octavo pages each issue, and embrace "Reports of all medical matters transpiring in the whole world."

PUBLICATIONS RECEIVED.

Bennett (John Hughes). Clinical Lectures on the Principles and Practice of Medicine. From the last Edinburgh Edition. New York: S. S. & W. Wood, 1860.

Proceedings of the American Pharmaceutical Association at the Eighth Annual Meeting, at Boston, 1859.

Hamilton (Frank Hastings). A Practical Treatise on Fractures and Dislocations. Philadelphia: Blanchard & Lea, 1860.

Stillé (Alfred). Therapeutics and Materia Medica; a Systematic Treatise on the Action and uses of Medicinal Agents, including their Description and History, two volumes. Philadelphia: Blanchard & Lea, 1860.

Beck (Theodoric Romeyn). Elements of Medical Jurisprudence. Eleventh edition. Two volumes. J. B. Lippincott & Co., 1860.

Wood (G. B.). Introductory Lectures and Addresses on Medical Subjects, delivered chiefly before the Medical Classes of the University of Pennsylvania. Philadelphia: J. B. Lippincott & Co., 1859.

The Half-Yearly Abstract of the Medical Science, vol. xxx., July-December. London and Philadelphia, 1860.

*** *The length of the Original Communications in this Number has excluded several Review Articles, Medical Retrospect, and other matter.*